

PDP-11 Software
Source Book
Volume 2
Language Processors to
Transportation and
Reference Guides

Fifth Edition, July 1986

digital

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for the Professional Series"*

PDP-11



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Volume 2
Language Processors to
Transportation and Reference Guides

PDP-11

Software Source Book

Fifth Edition

digital

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Contents

	Page
Introduction: Resources for PDP-11 and PRO Users	
PDP-11 Software Source Book	v
Industries/Generic Disciplines	v
References Guides	vi
Submitting Entries for Software Source Books	vii
DIGITAL Services and Publications	vii
DECUS	vii
Local Sales Office	vii
Publications	viii
Industries/Generic Disciplines	
Accounting	3
Agriculture	149
Arts and Leisure	159
Computer Operations	177
Construction	213
Data Conversion	227
Development Tools	255
Distribution	363
Earth Resources	421
Education	429
Engineering	467
Facilities Management	547
File Management	557
Financial Management	609
Government	653
Graphics	671
Health Care	733
Information Management	795
Insurance	845
Language Processors	853
Law	945
Library Science	953
Management	959
Manufacturing	977
Media	1063
Office Systems	1075
Operating Systems	1113

iv Contents

Personal Computing	1159
Personnel	1167
Public Utilities	1179
Real Estate	1193
Research	1207
Sales and Marketing	1229
Service Industries	1245
Systems Communications	1259
Text Management	1367
Trade	1407
Transportation	1417

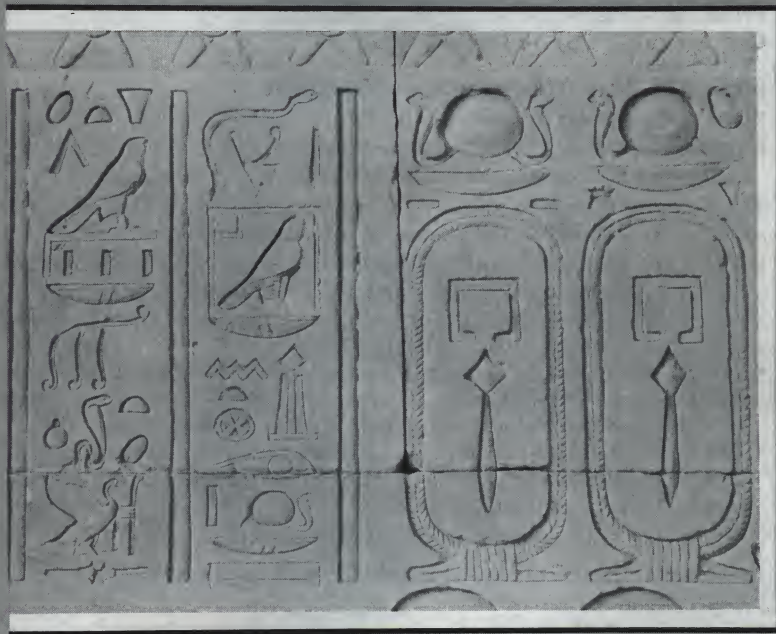
Reference Guides

Guide to Contents	1427
Keyword Cross-Reference Guide	1475
Product Title List	1609
Vendor Product Title List	1653
Index	1703

Submitting Entries for Software Source Books

1727

Language Processors



Robert Pyle

8008.BAS and 8080.BAS

PDP-11 Operating System: RSTS

Keywords: • Cross-assemblers • Microprocessor development

Memory required: 8K.

These cross-assemblers for the 8008 and 8080 microprocessors use a language similar to Intel's standard assembly language; instruction mnemonics are identical, but pseudoinstructions and expression formats are slightly different. Output is in the form of an assembly listing, alphabetical symbol table, and object code in standard Intel hex format. DECUS number 11-184.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

80/DS (PL/M-80) (Development System)

PDP-11 Operating System: ULTRIX-11, XENIX™

Keywords: • Assemblers • Compilers • Cross-compilers
• Microprocessor development

This integrated tool set for developing Intel 8080/8085 and Zilog Z80 software in both PL/M and assembly languages consists of:

- The 80/PC Compiler, which compiles source modules written in the 80/PL language (an upwards-compatible extension to the PL/M-86 language). Object modules are produced in the Intel MCS-80/85 Relocatable Object Module Format.
- The 80/AS Assembler, which is generally compatible with the Intel 8080/8085 Assembly Language and produces object modules in the Intel MCS-80/85 Relocatable Object Module Format.
- The 80/RL Relocation and Linking Tools, which combine relocatable object modules into absolute object modules for down-loading to the target machine or to an emulator.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: £5200

Contact: G. C. Evans

44-(438) 316311

WARREN POINT INTERNATIONAL, LTD.

Babbage Road

Stevenage, Herts SG1 2EQ England

86/PC (PL/M-86) Compiler

PDP-11 Operating System: ULTRIX-11, XENIX™

Keywords: • Compilers • Cross-compilers
• Language enhancers • Microprocessor development

The 86/PC Compiler supports the 86/PL language and produces object modules for execution on the Intel 8086, 8088, and 80186 microprocessors. Object modules are produced in the Intel MCS-86 Relocatable Object Module Format.

The 86/PL language is a superset of the PL/M-86 language, and most PL/M-80 and PL/M-86 source modules should compile and execute without modification.

The 86/PL Compiler contains a number of extensions to PL/M-86, including relaxation of restrictions on the ordering and factoring of items in DECLARE statements, introduction of structures within structures, introduction of explicitly based references, use of HIGH and LOW built in as assignment targets, introduction of a fully delimited IF block construct and an UNDO statement, and introduction of a new scope for external data and procedures so that external items declared in an included file may be redeclared within a module.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: £4700

Contact: G. C. Evans

44-(438) 316311

WARREN POINT INTERNATIONAL, LTD.

Babbage Road

Stevenage, Herts SG1 2EQ England

AIS-PL/I Compiler

PDP-11 Operating System: IAS, Micro/RXS, RSTS, RSX

PRO Operating System: P/OS

Keywords: • Compilers • Source code control

This PL/I compiler is well suited for both traditional numeric applications and those with extensive file processing and considerable non-numeric data. The features of AIS-PL/I permit rapid and straightforward development of programs that can easily be documented and maintained.

A large subset of ANSI Standard PL/I (X3.53-1976), AIS-PL/I provides numeric data types and operators, bit and character string-handling facilities, a variety of storage classes and data structures, a comprehensive I/O interface, extensive error reporting, and the standard PL/I program-control structures. AIS-PL/I is a true compiler, generating reentrant and recursive object code that is linked to needed support subroutines. Both the support and the application routines can be shared among user tasks.

Price: \$700 - \$4500

Contact: Elizabeth Epermanis

(919) 942-7801

APPLIED INFORMATION SYSTEMS, INC.

500 Eastowne Drive, Suite 207

Chapel Hill, NC 27514

ALGEB: A Language for Algebra and Number Theory

PDP-11 Operating System: RT-11

Keywords: • Calculation aids • Mathematics

Memory required: 16K.

ALGEB, a language designed to aid in computational algebra and number theory, is a block-structured recursive language in the ALGOL-Pascal family. Matrix and vector manipulation features, array-type procedures, and operations with integers of essentially unlimited size are provided; however, floating-point operations are not.

The language has been thoroughly tested. ALGEB runs on any PDP-11, PDT-11, or LSI-11 with at least 16K words, operating under RT-11. DECUS number 11-475.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

ALGOL for RT-11

PDP-11 Operating System: RT-11

Keywords: • Compilers • Language enhancers
• Programming tools

Memory required: 16K.

The ALGOL compiler and run-time system for the ALGOL-60 language operate on 16K or larger RT-11, RSX-11M, or RSX-11D systems.

This implementation of the ALGOL-60 language features dynamic allocation of program and data segments through a software virtual memory system. All ALGOL-60 statement components are supported, plus several extensions, such as the THRU statement, numbered and unnumbered CASE statements, and the string REPLACE and SCAN statements. Data types supported are 16-bit INTEGER, 16-bit BOOLEAN, and 1- or 2-dimensional arrays (of INTEGER or BOOLEAN elements) with variable upper and lower bounds. Procedures may be typed INTEGER or BOOLEAN or may be untyped. A Burroughs-compatible implementation of string operations using pointer variables is provided.

Other features include partial word operations, bit concatenation, IF and CASE expressions of all types, record-oriented random access, and stream sequential I/O. The I/O operations read and write standard RT-11 files.

The virtual memory support, RT-11 input/output, and all other operations are handled through an interpreter that executes the code files output by the ALGOL compiler. DECUS number 11-231.

Restrictions: ALGOL for RT-11 does not support floating-point arithmetic.

Note: No source is available for this program. A partial listing file is included with the tapes.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

APL-11

PDP-11 Operating System: IAS, RSX

Keywords: • Interpreters • Mathematics
• Modeling/simulation • Programming tools

Memory required: 40K bytes.

APL-11 is an interpreter for the APL language, a mathematically structured programming language that features many functions that operate on arrays of arbitrary order. APL-11 is used as a general data processing language as well as a mathematical tool. APL can define recursive procedures that use local variables. The special APL character set can be used on a terminal that supports it or can be simulated with mnemonic escape sequences on non-APL terminals. The user can interact with the APL interpreter to examine and change variables, alter statements without recompilation, and trace program action.

The following documentation is not on the magnetic media: *APL-11 Programmers Reference Manual* and *Installation Guide/Release Notes*. Both are available from DIGITAL (QJ908-GZ).

APL-11 for RSX-11 V2.1 has been run in compatibility mode on the VAX but is known to have a problem with terminal I/O coming out double-spaced. This RSX-11 version of APL-11 has updated sources on it (V2.1).

Documentation is on magnetic media. DECUS number 11-SP-25.

A version of this product is available for VAX computers.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

APL-11 for RSTS/E

PDP-11 Operating System: RSTS

Keywords: • Interpreters • Mathematics

Memory required: 40K bytes.

APL-11 is an interpreter for the APL language, a mathematically structured programming language featuring many functions that operate on arrays of arbitrary order. APL-11 is used as a general data processing language as well as a mathematical tool. APL-11 can define recursive procedures that use local variables. The special APL character set can be used on a terminal that supports it or can be simulated with mnemonic escape sequences on non-APL terminals. The user can interact with the APL interpreter to examine and change variables, alter statements without recompilation, and trace program action. DECUS number 11-SP-43.

Associated documentation: *APL-11 Programmer's Reference Manual*, available from DIGITAL (QJ906-GZ), is not on the magnetic media and is not available from DECUS.

Note: The document "RSTS — APL Release Notes/Patches" (Media Service Charge Code AA) is required in order to install and use this version of APL-11. All known patches and some of the remaining problems are included in this document.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

APL-11 for RT-11

PDP-11 Operating System: RT-11

Keywords: • Interpreters • Mathematics

Memory required: At least 44K bytes (48K bytes recommended).

APL-11 is an interpreter for the APL language, a mathematically structured programming language featuring many functions that operate on arrays of arbitrary order. APL-11, used as a general data processing language as well as a mathematical tool, can define recursive procedures that use local variables. The special APL character set can be used on a terminal that supports it or can be simulated with mnemonic escape sequences on non-APL terminals. The user can interact with the APL interpreter to examine and change variables, alter statements without recompilation, and trace program action. DECUS number 11-476.

Associated documentation: *APL-11 Programmer's Reference Manual* and *Installation Guide/Release Notes* are available from DIGITAL (QJ909-GZ). The documentation is not on magnetic media.

Note: This version of APL-11 consists of 421 files and 4906 blocks on the tape but is not available on diskette. APL-11 for RT-11 includes fully patched V2.0 save images, complete V2.0 source files, and V2.1 sources that have not been tested under RT-11 but that do contain fixes that could not be patched on V2.0.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

AUTOVAX

PDP-11 Operating System: RSTS

Keywords: • Data conversion • Source code control
• Translators

This system, written in VAX BASIC, enables RSTS/E users to run BASIC-PLUS programs under VMS. AUTOVAX carries out a textual conversion of a BASIC-PLUS source program into VAX BASIC and replaces the BASIC-PLUS OPEN, GET, and PUT commands with special functions to enable the BASIC-PLUS program to use RMS. The VAX BASIC programs that result run in native mode under VMS. The VAX BASIC program's origin is detectable only by considerations of BASIC-PLUS programming style or by the use of a file handler specific to BASIC-PLUS.

Except where minor manual manipulation of source text is necessary, AUTOVAX is essentially automatic. AUTOVAX indicates such incidences, and the documentation describes the manipulation procedure. A subset of AUTOVAX analyzes the programs to be converted and indicates the degree of manual intervention required, thus providing a cost estimate of the conversion.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Barry Evans
(0902) 712912

CENSUS COMPUTER SERVICES LTD.

Kings House, St. Johns Square

Wolverhampton, WV2 4DT England

AVL

PDP-11 Operating System: ULTRIX-11

Keywords: • Compilers • File management • Networking

This fourth-generation applications implementation language for rapid prototyping and product development is similar in syntax to C but similar in data type to MUMPS. Functions are dynamically loadable, and program variables can be designated as disk resident, allowing permanent storage and sharing among multiple processes. Many tree-walking functions facilitate manipulation of data. A variable can be an arbitrarily subscripted array, and each node can have a value.

A source-level debugger, a data-directed editor, a large run-time library, many utility programs, and extensive documentation are included.

A version of this product is available for VAX computers.

Price: \$1200

Contact: William J. Ezell
(603) 883-9300

SOFTWARE INNOVATIONS, INC.

440 Amherst Street

Nashua, NH 03063

BACOMP (Pseudocompiler for RT-11/BASIC)

PDP-11 Operating System: CTS-300, RT-11

Keywords: • Compilers • Data conversion • Data dictionary

BACOMP converts an extended AA variable BASIC-11 program to a simple variable BASIC-11 program that will run under RT-11 or an RT-11 emulator. Distribution is in compiled form on a DX or a DY diskette.

The source program is created by using the extension .BA. All syntax rules apply to the body of the coding as would apply to BASIC-11 coding, except that lines 200 to 499 are reserved for a dictionary of variable names. The names may appear in any order, one on each line, and may contain any printable characters in any order but not including any spaces. Variables may be up to 12 characters long but can be extended easily if ordered specifically.

To compile the program, BACOMP is run, producing another program file with the extension .BAS. The extended variables have been replaced with simple variables and therefore will run directly under RT-11. The source file .BA may be any reasonable length, since the compiler makes only one pass line by line, picking up the source file and writing the compiled file. The number of variables will affect the compile time; typically, a 3-page program with 31 variables compiles in 26 seconds on an 11/23 with floppy disks.

Optionally, BACOMP produces a cross-reference listing of simple variables versus extended variables, which may be displayed on the CRT or the line printer.

Price: \$150

Contact: Wendell Boucher
(805) 528-7187

BUSINESS ENHANCEMENT SYSTEMS TECHNOLOGY
1235 Bay Oaks Drive
Los Osos, CA 93402

BASIC-11 Extension Routines

PDP-11 Operating System: RT-11

Keywords: • Interpreters • Language enhancers
• Programming tools

Memory required: 16KW.

These extension routines to the BASIC-11 V2 interpreter running under RT-11 V03 (or later) provide the means for reading (GET, GETB, TBIT) and writing (PUT, PUTB, SBIT) words, bytes, and bits at any implemented UNIBUS or Q-BUS address. That bus access is useful for exercising any peripheral device, especially if a handler is not present in the operating system. The arguments for those routines may be either octal or decimal. Also included are routines for identifying (IDEN) the extended BASIC-11 interpreter and for fast zeroing (NULL) arrays. The package includes complete source and documentation files. DECUS number 11-294.

Restrictions: The routines are not usable with double-precision option.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

BASIC-11/RT-11**PDP-11 Operating System:** CTS-300, RT-11**PRO Operating System:** RT-11**Keywords:** • Compilers • Language enhancers
• Programming tools

Memory required: 32K bytes.

BASIC, a conversational programming language developed at Dartmouth College, uses simple English-like statements and familiar mathematical notations to perform operations. BASIC-11/RT-11 is an incremental, interactive, interpretive compiler.

BASIC-11/RT-11 features commands for saving, editing, running, and retrieving BASIC programs; support for real, integer, double-precision, and string data types; immediate-mode statements for debugging and desk calculator use; sequential data storage, using the RT-11 file system; string capability, including string arrays and functions; disk virtual arrays for string, integer, and real data types; chaining with COMMON to accommodate large programs; a CALL facility for invoking assembly language subroutines, using a PDP-11 FORTRAN-compatible call interface; and formatted output, using the PRINT USING statement.

Refer to SPD #12.05.xx (PDP-11) or 40.39.xx (Professional) when requesting further information on this product from your local DIGITAL sales office.

Price: \$395 – \$590**Contact:** Consult your local DIGITAL sales office (see Introduction).**Basic-L****PDP-11 Operating System:** ULTRIX-11**Keywords:** • Compilers • Programming tools • Translators

This language processor translates Basic-L code into C, which is then compiled. The Basic-L language is a hybrid of BASIC and C and combines the safety features of BASIC with the advanced control structures of C. All the facilities of the C preprocessor are available.

The Basic-L language includes BASIC-style string and matrix manipulation, subscript checking, and GOSUB constructs with C-style if statements; while, do, and for loops; and functions. Basic-L uses regular UNIX* files, with no record structure imposed.

Basic-L and C functions can be linked into one executable program. The package includes a run-time library.

A version of this product is available for VAX computers.

Price: \$200 – \$275**Contact:** Marta Greenberg
(603) 883-9300

SOFTWARE INNOVATIONS, INC.

440 Amherst Street

Nashua, NH 03063

BASIC-PLUS-2 for IAS

PDP-11 Operating System: IAS

Keywords: • Interpreters • Language enhancers
• Programming tools

BASIC, a conversational programming language developed at Dartmouth College, uses simple English-like statements and familiar mathematical notations to perform operations; BASIC-PLUS-2 is a superset of Dartmouth BASIC. The BASIC-PLUS-2 language processor is composed of a compiler and an object-time system/library. BASIC-PLUS-2 also features terminal-format files; virtual arrays; RMS I/O; extensive string-manipulation functions; matrix package handling operations; long variable names; IF...THEN...ELSE multi-statements; ON ERROR condition handlers; statement modifiers IF, WHILE, UNLESS, FOR; user-defined functions; multistatement lines and multiline statements; and external subprograms SUB, CALL, CHAIN, (through the RQST \$ Directive), and COMMON. BASIC-PLUS-2 uses the full, printable ASCII character set for its alphabet.

The BASIC-PLUS-2 compiler produces an object module or a macro source program. The compiler checks each program line for syntax errors and returns an appropriate message if an error is found. The user can then correct and recompile the program. Program compilations result in an object module that can be linked and executed or a macro source program that can be assembled and linked at the operating system command level.

BASIC-PLUS-2 provides a traceback mechanism that traces the path of program execution when an error occurs in a function or subprogram.

Refer to SPD #14.13.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the VAX computer.

Price: \$80 - \$3800

Contact: Consult your local DIGITAL sales office (see Introduction).

BASIC-PLUS-2 for RSTS/E

PDP-11 Operating System: RSTS

Keywords: • Application development • Compilers
• Language enhancers • Programming tools

This extended BASIC compiler runs under the RSTS/E operating system and takes full advantage of the PDP-11 floating-point and integer instruction sets and generates threaded code instructions.

BASIC-PLUS-2 provides a high-performance environment for applications development and timesharing, combining immediate mode with the power of a structured programming language.

In addition, BASIC-PLUS-2 provides a BASIC programming support environment; compile-time directives; structured programming constructs; the EXTERNAL statement; language subsets and subset flaggers; exception handling (ON ERROR) for main and subprograms; multiline statements and multistatement lines; program segmentation; symbolic names for control characters; definition of user-defined program constants through DECLARE CONSTANT; a BASIC symbolic debugger, allowing inspection and alteration of program variables; file organizations and access methods; dynamic record definition and variable allocation through MAP DYNAMIC; extended report formatting capabilities; arrays up to eight dimensions, declared at run time; matrix-manipulation capabilities; and compatibility with key RSTS/E BASIC-PLUS features.

Refer to SPD #14.54.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200 - \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

BASIC-PLUS-2 for RSX-11M and RSX-11M-PLUS

PDP-11 Operating System: RSX

Keywords: • Application development • Compilers
• Language enhancers • Programming tools

This extended BASIC compiler for the RSX-11M and RSX-11M-PLUS operating systems takes full advantage of the PDP-11 floating-point and integer instructions and generates threaded code instructions. Run-time operations are supported on RSX-11S. PDP-11 BASIC-PLUS-2 provides a high-performance environment for applications development and timesharing, combining immediate mode with the power of a structured programming language.

In addition, BASIC-PLUS-2 provides a BASIC programming support environment; compile-time directives; structured programming constructs; the EXTERNAL statement; language subsets and subset flaggers; exception handling (ON ERROR) for main and subprograms; multiline statements and multistatement lines; program segmentation; implicit or explicit data typing; symbolic names for control characters; definition of user-defined program constants through DECLARE CONSTANT; a BASIC symbolic debugger, allowing inspection and alteration of program variables; file organizations and access methods; dynamic record definition and variable allocation through MAP DYNAMIC; extended report formatting capabilities; arrays up to eight dimensions, declared at run time; and matrix-manipulation capabilities.

Refer to SPD #14.11.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200 – \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

BASTOC™ (BASIC to C)

PDP-11 Operating System: Idris™

Keywords: • Compilers • Language enhancers
• Pre- and postprocessors • Translators

This BASIC to C translator, suitable for assisting in migration from BASIC to C or for providing a BASIC (compiler) capability within a C environment, can be tailored, within limits, to particular versions of BASIC and operating systems. Both the language in which BASTOC is written and the output language are standard C (Kernighan and Ritchie). Minimal external library assumptions have been made, and all library calls have been isolated to a few specific modules in the BASTOC run-time library. The translator program uses those system-tailored modules in the BASTOC run-time library for all of its interfaces to the local operating system.

BASTOC consists of a translator program and a library of run-time functions. The translator reads BASIC source programs as input and writes C source programs as output. The resultant object modules are selectively linked with the BASTOC run-time library to form an executable program.

BASTOC versions are available to support the following BASIC dialects: Microsoft Extended BASIC, CBASIC and CBASIC Compiler, and TRS-XENIX MBASIC. BASTOC has a few extensions that are appropriate to a C language environment.

Idris™ is a trademark of Whitesmiths, Ltd.

A version of this product is available for VAX computers.

Price: \$350 – \$15,000

Contact: Anita Fitzgibbons
(215) 628-0846

JMI SOFTWARE CONSULTANTS
904 Sheble Lane
Spring House, PA 19477

BOS/MicroCobol

PDP-11 Operating System: BOS/5, MBOS/5

Keywords: • Compilers • Debugging • Programming tools
• Software utilities

BOS/MicroCobol is a powerful COBOL compiler with a full range of program development utilities for use under the single-user BOS/5 and multiuser MBOS/5 operating systems. Program development utilities include text editor, linkage editor, librarian, interactive debugging, cross-referencer, screen formatter, and JCL builder. A comprehensive

library of precompiled system routines is provided, including multikey sort, six file-access methods, data conversion, and file conversion. Multiuser facilities, such as file sharing and record locking, are supported.

Price: \$550 – \$900

Contact: Ron Moore

(214) 484-2717

BOS NATIONAL, INC.

2560 Royal Lane #228

Dallas, TX 75229

C Cross-Compiler for National Semiconductor Series 32000

PDP-11 Operating System: RSX

Keywords: • Assemblers • Cross-compilers

• Programming tools • Source code control

Available for most popular development systems, this cross-compiler provides for down-loading programs to the DB32016 development board. The cross-compiler implements the complete C language as defined by Kernighan and Ritchie.

The cross-compiler uses up to six 32-bit machine registers for the C languages's "register" declaration. Floating-point support is provided with the NS32081 floating-point unit.

The cross-compiler package consists of both a native code generator for the host development machine and a code generator for the Series 32000. Also included is a cross-assembler that optionally produces complete assembly listings with addresses, object code, and assembler source code. Additional programming utilities, including a linker and a librarian, are provided. A comprehensive portable C library with formatted I/O and string-handling routines is provided for both the host development system and the 32000.

A version of this product is available for VAX computers.

Price: \$2000 – \$3500

Contact: Anita Fitzgibbons

(215) 628-0846

JMI SOFTWARE CONSULTANTS

904 Sheble Lane

Spring House, PA 19477

C Language System (Binary Version) for the Professional 300

PRO Operating System: RT-11

Keywords: • Compilers • Development tools

• Programming tools • Software utilities

The DECUS C distribution contains a complete C programming system, including:

- A compiler for the C language. The entire language is supported except for floating-point, macros with arguments, bit fields, and enumeration.

- A common run-time library (standard I/O library) for C programs running under the RT-11 operating system. By using this library, C programs can be developed on one operating system for eventual use on another.
- Several C programs, including a cross-referencer lister for C programs, a lexical analyzer program generator, cross-assemblers for several microcomputers, and several games.
- Extensive documentation for the compiler and run-time library.

DECUS number PRO-103.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

C Language System for RT-11 (Binary Version)

PDP-11 Operating System: RT-11

Keywords: • Compilers • Software utilities

Memory required: 24KW minimum.

The general-purpose programming language C is well suited for professional use. The DECUS C distribution contains a complete C programming system, including:

- A compiler for the C language. The entire language is supported except for floating point, macros with arguments, bit fields, and enumeration.
- A common run-time library (standard I/O library) for C programs running under the RT-11 operating system. By using this library, C programs may be developed on one operating system for eventual use on another.
- Several C programs, including a cross-reference lister for C programs, a lexical analyzer program generator, cross-assemblers for several microcomputers, and several games.
- Extensive documentation for the compiler and run-time library.

Note: Sources are not included. All software is distributed in binary format. C may be run under RT-11 V3B. Magtape users should order DECUS number 11-SP-18, which is a more complete offering of the C Language System and includes sources. DECUS number 11-513.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

C Language System in RT-11 Format

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Compilers • Programming tools
• Software utilities

Memory required: 56KB.

This tape contains the C Language System, Second Master Release Version of November 1983, the same information contained on the tape for DECUS number 11-SP-18. The information has been repacked from the DOS format of 11-SP-18 into an RT-11-compatible format. The files from each of the 14 DOS (UIC) accounts are in RT-11 logical

disk files. The files from DOS (5,1) are in the RT-11 LD file 501.DSK. The logical disk files are all full, with the largest being 3179 blocks and the smallest being 159. See the catalog listing of 11-SP-18 for further information. DECUS number 11-SP-68.

Restrictions: DECUS C supports a subset of the current version of C. Minor problems may be encountered in converting from other dialects of C.

A version of this product is available for VAX computers.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

C Language System, Second Master Release

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Compilers • Microprocessor development
• Programming tools • Software utilities

Memory required: 28K words.

C is a general-purpose programming language well suited for professional use. The DECUS C distribution contains a complete C programming system, including:

- A compiler for the C language. The entire language is supported except macros with arguments, bit fields, enumerations, and structure assignments.
- A common run-time library (standard I/O library) for C programs running under the RSX-11 or RT-11 operating systems. By using this library, C programs may be developed on one operating system for eventual use on another.
- A RSTS/E extensions library for accessing all RSTS/E executive services.
- An RSX-11M extensions library for accessing all RSX-11M executive services.
- More than 20 C programs, including a cross-reference lister for C programs, a lexical analyzer program generator, cross-assemblers for several microcomputers, and several games.
- Extensive documentation for the compiler and run-time libraries.

All software is distributed in source format. C may be built to run under RSTS/E V7.2/V8.0, RSX-11M V4.0, RT-11 V4.0, VMS V3.1-V3.2 (compatibility mode), or TSX-PLUS V2.2/V3.0. C may be modified to run on earlier versions of those operating systems and should run on subsequent versions without extensive modification. DECUS number 11-SP-18.

Restrictions: DECUS C supports a subset of the current version of C. Minor problems may be encountered in converting from other dialects of C.

Note: Full support is provided for EIS, FPU, improved code generation, and improved utility programs. A few modules are release-specific and may require modification for earlier or later releases. Primarily on

VMS compatibility mode, all documentation is included on the tape but can be ordered in hard copy.

A version of this product is available for VAX computers.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

C Language System with Native Toolkit

PRO Operating System: P/OS

Keywords: • Compilers • Programming tools
• Software utilities

This C distribution contains a subset of the DECUS C programming system that includes a compiler for the C language, a common run-time library ("standard I/O library") for C programs running under the RSX-11 or RT-11 operating systems, and an RSX-11/M extensions library allowing access to all RSX-11M executive services. DECUS number PRO-124.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

C Native and Cross-Compilers

PDP-11 Operating System: Micro/RSX, RSTS, RSX, RT-11,
ULTRIX-11

PRO Operating System: Idris™, P/OS, RT-11

Keywords: • Compilers • Cross-compilers • Programming tools

Whitesmiths C compilers run on six machine architectures, and cross support is available for major microprocessors. Our C compilers include full implementation of standard C and feature separate compilation, allowing the combination of C, Pascal, and assembly language. Our compilers include a portable run-time library with string-manipulation functions and extensive I/O formatting support. Other features include a UNIX*-style compatible library and support for ROM-based programs.

Idris™ is a trademark of Whitesmiths, Ltd.

A version of this product is available for VAX computers.

Price: \$550 - \$1800

Contact: Susan Ferber

(617) 369-8499

WHITESMITHS, LTD.

97 Lowell Road

Concord, MA 01742

C Test Suite

PDP-11 Operating System: Independent, UNITY

Keywords: • Compilers • Debugging

The C Test Suite is a collection of thousands of programs (conforming to draft ANSI C Standard) that exhaustively test C constructs. The programs are arranged in modules so that programmers can test one area in a few minutes or an entire compiler in a few weeks.

C Test Suite checks preprocessor and lexical conventions; default typing rules; constants in various bases and floating-point literals; string literals; goto, while, do, for, switch, continue, if, and ternary ?; functions for parameters, types, recursion, and autovariabiles; enumerated types and void types; arrays and array initialization; structs, unions, and bit fields; operator precedence; initialization of variables; pointers to ints, longs, chars, and shorts, pointer arithmetic; autoincrement/autodecrement; shifts/casting; and arithmetic expressions, including conversion rules, function calls, intermixed pointers structs and variables, storage classes, and op = forms of arithmetic.

A version of this product is available for VAX computers.

Price: \$20,000

Contact: Sales Department

(714) 493-8664

HUMAN COMPUTING RESOURCES CORP.

10 St. Mary Street, Fourth Floor

Toronto, Ontario M4Y 1P9 Canada

C68

PDP-11 Operating System: ULTRIX-11

Keywords: • Assemblers • Compilers • Cross-compilers
• Microprocessor development

This C compiler generates compact, efficient, executable object code for MC68000 microprocessors. C68 consists of a macropreprocessor, compiler, relocatable assembler, linking loader, support library, and utilities. Also included is a symbolic debugger that does MC68000 instruction disassembly, referencing compiler and/or assembler symbolic names. The debugger also provides breakpointing, instruction tracing, and inspect/change facilities. Utility programs are included for down-loading executable programs and symbol tables to the 68000 development board by means of a serial channel. The C68 system generates programs that execute stand alone or under operating system control on the 68000. Versions of C68 are available for the LSI-11 and PDP-11 with UNIX*, VAX-11 with UNIX* or VMS, Tektronix 8560 with UNIX*, and MC68000 with VERSAdos, UNIX*, or REGULUS.™

A version of this product is available for VAX computers.

Price: \$1495

Contact: Bill Allen

(619) 578-0860

ALCYON CORP.

8716 Production Avenue

San Diego, CA 92121

CDL2 Compiler

PDP-11 Operating System: RSX

Keywords: • Compilers • Cross-compilers
• Microprocessor development • Programming tools

This high-level programming language offers a special means of structuring and verbalization. CDL2 is an open-ended language that allows flexible use of the hardware. Selected parts of a program can be formulated in a target language — usually the assembler of the target computer — and can be integrated by a macro mechanism. CDL2 thus combines the advantages of high-level programming with the execution efficiency of a machine-oriented language.

CDL2 programs consist of separately compilable modules linked through export-import interfaces. Strictly specified interfaces serve as a media for communication; implementation details remain hidden. Thus, programs are clearly organized and easier to maintain.

Stepwise refinement is consistently applied. Each procedure contains calls of other procedures that represent the next level of refinement. The lowest level is macros in the target language. Procedures and macros are short and clearly organized. The compiler combines the macros into larger units by expanding them at their calls or by calling them as procedures.

CDL2 forces the programmer to specify intentions precisely. That promotes the transparency of the software and allows a thorough plausibility check on the flow of control and data, revealing errors before the test phase begins. A source-oriented debug system helps to detect errors in the design and the algorithmic formulation.

Programs can be adapted on the macro level for specific hardware or operating system functions. Tasks that are reserved for assembler programming can be formulated in a high-level language.

To implement the language simply and efficiently on different computers, a standardized interface for code generators has been created. Free combination of each compiler with each code generator permits flexible cross-compilation techniques. User-written code generators can be integrated.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Hartmut Feuerhahn
+ 49-30-8826991

EPSILON

Kurfürstendamm 188

D-1000 Berlin 15 West Germany

COBOL**PDP-11 Operating System: RSX**

Keywords: • Compilers • Language enhancers
• Programming tools

COBOL is a high-level language for business data processing. The PDP-11 COBOL compiler is based on specifications published by the American National Standards Institute (ANSI) in the document *American National Standard COBOL*, X3.23-1974. PDP-11 COBOL has been certified as a FIPS-PUB 21-1 low-intermediate-level COBOL compiler. PDP-11 COBOL runs under the IAS, RSTS/E, RSX-11M, and RSX-11M-PLUS operating systems.

The PDP-11 COBOL language processor is composed of a compiler and an Object Time System/Library. The PDP-11 COBOL compiler produces an object module from a source program. The compiler checks each program line for syntax errors and returns an appropriate message if an error is found. The user can then correct the program and compile it. Program compilations result in an object module that can be linked and executed at the operating system command level.

PDP-11 COBOL allows the user to write subprograms in both COBOL and MACRO-11 assembly language. Those subprograms are accessed with the CALL statement.

PDP-11 COBOL file I/O operations are controlled through the RMS data management software. That method of record I/O supports sequential, relative, and indexed file organizations.

PDP-11 COBOL includes:

- An interactive debugger that allows a user to set and remove breakpoints and to examine and change program variables
- Support for the Commercial Instruction Set (CIS)
- CBLMRG, which merges Skeleton Overlay Descriptor Language (SKL) files, generated by COBOL compilations into a single Overlay Descriptor Language (ODL) file
- RFRMT, which converts PDP-11 terminal-format COBOL programs into conventional ANSI COBOL program format

Refer to SPD #12.40.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the VAX computer.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

COBOL-81/RSTS/E**PDP-11 Operating System: RSTS**

Keywords: • Compilers • Language enhancers
• Programming tools

This high-level language for business data processing operates under the RSTS/E operating system. COBOL-81/RSTS/E, based on the 1974 ANSI COBOL Standard X3.23-1974, includes some of the features

planned for the next COBOL standard. As a subset of VAX COBOL, COBOL-81/RSTS/E includes various DIGITAL extensions to COBOL, including screen handling at the source language level.

COBOL-81/RSTS/E meets the low-intermediate-level requirements of the U.S. government, as described in FIPS PUB 21-1. Many of the individual modules are designed to meet the high-level requirements.

Refer to SPD #13.16.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the VAX computer.

Price: \$1200 - \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

COBOL-81/RSX

PDP-11 Operating System: RSX

Keywords: • Compilers • Debugging • Language enhancers
• Software utilities

This high-level language for business data processing operates under control of the RSX-11M and RSX-11M-PLUS operating systems. Based on the 1974 ANSI COBOL Standard X3.23-1974, the language includes some of the features planned for the next COBOL standard. COBOL-81/RSX is a subset of VAX COBOL and includes various DIGITAL extensions to COBOL, including screen handling at the source language level.

COBOL-81/RSX meets the low-intermediate-level requirements of the government, as described in FIPS PUB21-1. Many of the individual modules are designed to meet the high-level requirements.

VAX COBOL and COBOL-81 share many common features, which are implemented with the same syntax and semantics on both compilers. Thus, source code developed using COBOL-81 can be migrated to VAX COBOL. Additionally, a VAX/VMS system can be used to develop source code that will eventually be compiled using COBOL-81.

The following DIGITAL extensions to COBOL are implemented in COBOL-81: screen handling is implemented as extensions to the DISPLAY and ACCEPT statements; RMS-STS and RMS-STV special registers can be examined to assist debugging; and file-sharing features enable more than one user to access data at the same time.

The following utilities are provided to assist the COBOL-81 programmer: BLDODL (Build ODL), which merges Skeleton Overlay Descriptor Language (SKL) files generated by COBOL compilation into a single Overlay Descriptor Language (ODL) file; and RFM (ReFormat), a utility that converts source programs from terminal format to conventional ANS COBOL and vice versa.

The prerequisite software includes RSX-11M or RSX-11M-PLUS operating systems and PDP-11 SORT/MERGE, if the COBOL SORT or MERGE verbs are used.

Refer to SPD #14.26.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200 – \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

COBOL-Plus

PDP-11 Operating System: RT-11, TSX-PLUS™

Keywords: • Compilers • Language enhancers
• Programming tools

This high-performance, mainframe-level implementation of ANSI-74 COBOL implements a rich set of the COBOL language and provides high-performance execution of large programs through an automatic segmentation feature that allows the execution of programs much larger than available memory. COBOL-Plus should be used to:

- Provide a high-performance execution environment for COBOL on PDP-11s
- Develop new programs for execution on PDP-11s or other computers with an ANSI-74 COBOL implementation
- Transport existing ANSI-74 COBOL programs from another computer onto a PDP-11
- Convert batch COBOL programs into interactive COBOL programs on a PDP-11
- Debug or enhance, on a PDP-11, COBOL programs normally used on another computer with an ANSI-74 COBOL implementation

COBOL-Plus is micro and mainframe compatible and features highly productive development, unlimited program size, self-maintaining ISAM, efficient multiuser support, and convenient, high-speed file sorting. COBOL-Plus includes RTSORT and will compile and run most Ryan McFarland COBOL.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$850 – \$2000

Contact: Gary Manookian, Domestic Sales
(615) 327-3670

S & H COMPUTER SYSTEMS, INC.
1027 17th Avenue South
Nashville, TN 37212

Control C Trap Handler for FORTRAN

PDP-11 Operating System: RSX

Keywords: • Language enhancers • Programming tools

This package permits the PDP-11 FORTRAN user to intercept the CTRL/C character and to redirect program control to a user-specified line number. The package has been tested successfully under the FOR, F4P, and F77 FORTRAN compilers. If the FOR FORTRAN compiler is used, threaded code (/CD:THR) should not be specified.

The CTRL/C trap will be canceled if the procedure calling ITRAP executes a return, the trap is explicitly canceled by a call to UNTRAP(), or

the trap is implicitly canceled by a CTRL/C trap. DECUS number 11-593.

Restrictions: FORTRAN IV code must not be compiled with the /CD:THR switch.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

CORAL 66

PDP-11 Operating System: RSX

Keywords: • Process control • Programming tools • Real time

PDP-11 CORAL 66 is a high-level block-structured programming language. The standard general-purpose language prescribed by the British government for real-time and process-control applications, CORAL 66 is defined in BS 5905, British standard specification for computer programming language CORAL 66.

The language is designed to replace assembly-level programming in modern industrial and commercial applications. CORAL is used for long-life products, which require ease of maintenance and flexibility.

FORTRAN and MACRO-11 subroutines may be incorporated in CORAL tasks, provided that certain coding conventions are followed.

The PDP-11 CORAL 66 compiler operates under the RSX-11M and RSX-11M-PLUS operating systems and is implemented in accordance with the British standard.

Refer to SPD #14.56.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the VAX computer.

Price: \$560 - \$115,000

Contact: Consult your local DIGITAL sales office (see Introduction).

DBL (Data Business Language)

PDP-11 Operating System: Micro/RSTS, Micro/RSX, RSTS, RSX,
RT-11

PRO Operating System: TSX-11

Keywords: • Compilers • Debugging • Development tools
• Programming tools

The DBL programming language is an advanced, portable superset of DIBOL-11 and has many extensions that simplify program development and maintenance. The many DISC-developed enhancements increase the effectiveness of the language and provide modern, structured-language facilities. DBL maintains upward compatibility through all versions of DBL and DIBOL, including DIBOL-83.

DBL Version 4.0 allows migration of DBL and DIBOL programs to an increasing number of operating systems. Some of the features of DBL Version 4.0 include a software virtual-memory environment, eliminating the need for program overlaying; multikey ISAM support through

extended DBL statements; a fixed-point decimal data type; multidimensional arrays; terminal-independent screen functions for cursor positioning and terminal attribute manipulation; compile-time constants; the ability to create executable subroutine libraries; and a powerful, easy-to-use symbolic debugger for efficient program development.

A version of this product is available for VAX computers.

Price: \$449 – \$5949

Contact: Stacey Hodge
(916) 635-7300

DISC

11070 White Rock Road, Suite 210
Rancho Cordova, CA 95670

DDC/PPCL Compiler — System 600

PDP-11 Operating System: RSX

Keywords: • Compilers • Facilities management

This RSX-11M direct digital control (DDC) software package provides capabilities for editing, compiling, and communicating a proprietary process control language — Powers Process Control Language (PPCL) — designed for use with data acquisition and HVAC control hardware manufactured by MCC Powers. This package is designed to run with MCC Powers System 600 Kernel software.

Price: \$2000

Contact: Larry Hunt, Manager, Sales Support
(312) 272-9555

MCC POWERS

2942 MacArthur Boulevard
Northbrook, IL 60062

Des BASIC (BASIC Cross-Compiler)

PDP-11 Operating System: ULTRIX-11

Keywords: • Cross-compilers • Microprocessor development

This cross-compiler system operates on a VAX or a PDP-11 minicomputer while generating code for the 68000, 8086/88, Z80, and Z8000. The Des BASIC is a complete BASIC language programming system that includes a BASIC front end, an optimizing back end, an assembler, a linker, and comprehensive run-time libraries. The Des BASIC is compatible with the IBM-PC BASIC and MBASIC from MicroSoft. Support for single- and double-precision floating-point arithmetic is included.

Des BASIC is one of the highest-performance compilers in the marketplace. Destek also offers a run-time library for OS/RT, Destek's real-time, multitasking operating system kernel. Compiler front ends for C and Pascal are also available.

A version of this product is available for VAX computers.

Price: \$6000

Contact: Dennis Rieger
(408) 737-7211

THE DESTEK GROUP
830 East Evelyn Avenue
Sunnyvale, CA 94086

Des C (C Cross-Compiler)

PDP-11 Operating System: ULTRIX-11

Keywords: • Cross-compilers • Microprocessor development

This cross-compiler system operates on a VAX or a PDP-11 minicomputer while generating code for the 68000, 8086/88, Z80, and Z8000. The Des C is a complete C language programming system that includes a C front end, an optimizing back end, an assembler, a linker, and comprehensive run-time libraries. Des C includes the full Kernighan and Ritchie capability (UNIX* Version 7) with single- and double-precision floating-point arithmetic included.

Des C is one of the highest-performance compilers in the marketplace. Destek also offers a UNIX*-like run-time library for OS/RT, Destek's real-time, multitasking operating system kernel. Compiler front ends for BASIC and Pascal are also available.

* UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for VAX computers.

Price: \$6000

Contact: Dennis Rieger
(408) 737-7211

THE DESTEK GROUP
830 East Evelyn Avenue
Sunnyvale, CA 94086

Des Pascal (Pascal Cross-Compiler)

PDP-11 Operating System: ULTRIX-11

Keywords: • Cross-compilers • Microprocessor development

This cross-compiler system operates on a VAX or a PDP-11 minicomputer while generating code for the 68000, 8086/88, Z80, and Z8000. The Des Pascal is a complete Pascal language programming system that includes a Pascal front end, an optimizing back end, an assembler, a linker, and comprehensive run-time libraries. The Pascal is based on the ISO standards and contains numerous extensions for business and industrial use. Support for single- and double-precision floating-point arithmetic is included.

Des Pascal is one of the highest-performance compilers in the marketplace. Destek also offers a run-time library for OS/RT, Destek's real-time, multitasking operating system kernel. Compiler front ends for C and BASIC are also available.

A version of this product is available for VAX computers.

Price: \$6000

Contact: Dennis Rieger
(408) 737-7211

THE DESTEK GROUP
830 East Evelyn Avenue
Sunnyvale, CA 94086

DIBOL ACCEPT/DISPLAY Subroutines

PDP-11 Operating System: CTS-300, RSTS, RT-11

Keywords: • Data entry • Graphics

This DIBOL-11 subroutine package supports the VT100 CRT terminal. The package includes the ACCPT subroutine to facilitate data entry from the terminal and the DISPL and CENT subroutines to support standard, advanced video, special graphics characters, and centered display output to the VT100. DECUS number 11-494.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

DIBOL String-Interpreting Subroutines

PDP-11 Operating System: RSTS

Keywords: • Data conversion • Diagnostics • Mathematics
• Presentation aids

This program consists of two DIBOL subroutines and the demonstration programs for the subroutines. An algebraic-string evaluator allows nested parentheses, in-string numeric literals, and single-letter variables. The Boolean evaluator has the same features and will also handle alphanumeric literals, both in the string and in the variable array. The two subroutines have error checking, with status codes returned to the calling program, and also share a common modular parameter format so that the subroutines may be XCALLED using the same variable list, and so on.

All source code is included and is self-documenting. The demo programs allow input of strings and variables and display evaluations or error codes as appropriate. DECUS number 11-637.

Restrictions: CRT-type with VT52-type cursor control is required to use the demo programs.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

DIBOL Translator

PDP-11 Operating System: RT-11

Keywords: • Data conversion • Programming tools
• Translators

Memory required: 16K.

This program translates DIBOL-8 programs to DIBOL-11 programs. The translator functions as an intermediate step, locating and altering

the areas in a DIBOL-8 user's program that are not compatible with the requirements of the DIBOL-11 compiler.

Error-free DIBOL-8 programs are translated into programs that, with minor modifications, can run under COS 350. The DIBOL Translator cannot, however, perform as an automatic converter or correct program errors. Rather, the translator discovers and eliminates, where possible, the inconsistencies between the two languages and notifies the user that certain areas may require further work. DECUS number 11-200.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

DISASM.BAS MACRO Disassembler

PDP-11 Operating System: RSTS

Keywords: • Data conversion • Debugging • File management
• Language enhancers

Memory required: 5K.

This BASIC-PLUS program for disassembling MACRO files is used principally on .SAV files. The program can be used to see if a .SAV file has been corrupted, to disassemble MACRO .SAV files not produced by link, to see what memory locations are being used in a program, and to track down bugs.

Output can be to the terminal (KB:) or to a file. The user can specify the following options: swap bytes, starting location, and words to skip. DECUS number 11-279.

Note: Output is not an exact reproduction of the MACRO source.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

DISASO: Object Module Disassembler

PDP-11 Operating System: RSTS

Keywords: • Data conversion • Language enhancers

Memory required: 16K.

DISASO takes object modules produced by assemblers and/or compilers and disassembles them back into an assembly language listing format. DISASO is similar to other disassemblers, such as DISASM (DECUS number 11-279), except DISASO is used on .OBJ files. DISASO uses additional information, such as global symbols, in the .OBJ files to generate symbolic addresses. Therefore, the output is easier to interpret than are disassembled listings from .SAV files. DECUS number 11-353.

Restriction: DISASO does not work on RSTS/E 6A or earlier. Resident library directives are not implemented.

Note: DISASO uses BASIC-PLUS extend mode.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

DSM-11 Translator

PDP-11 Operating System: DSM (DSM-11)

Keywords: • Language enhancers • Translators

Memory required: 32K words.

This translator consists of 3 globals and 215 translator routines that run on a DSM-11 system. Using a tape of MUMBS-11 routines as input, the translator automatically converts the input routines to Standard MUMPS code that is 85% to 90% executable and requires some hand editing. Translator-generated listings flag any line of questionable code and are helpful as a reference while editing. Also available, from the National Bureau of Standards, is the document *MUMPS Translator Methodology*, which helps to explain how the translator handles certain operators and expressions. Output from the translator includes the listings mentioned above and a tape of translated routines, which may subsequently be loaded into any area on a DSM-11 system for editing and testing. DECUS number 11-377.

Note: Some hand editing may be required when translating indirection, multiple concatenation operators, conditional overlays, \$M (expression), and \$C (null string).

Price: \$5 – \$225

Contact: DECUS (see Introduction)

DYNAMO

PDP-11 Operating System: IAS, RSTS, RSX, RT-11

Keywords: • Modeling/simulation

This continuous simulation language has been extensively used in the modeling of industrial, social, economic, and engineering systems. The language is easy to learn and therefore quite useful in educational environments.

Model construction is simplified through several DYNAMO features. Equations can appear in any order to facilitate documentation; commonly used functions are built in; debugging is simplified through extensive error checking with clear error messages; and the RERUN capability permits repeated simulations, each with different parameters, without recompiling.

DYNAMO is available on magnetic tape or, for PDP-11V03s, MINCs, or similar LSI-11-based systems, on diskettes.

Educators interested in applications of DYNAMO at the high school or college level may be interested in related publications available from the vendor.

A version of this product is available for VAX computers.

Price: \$1500 – \$10,000

Contact: Jack Pugh
(617) 864-8880

PUGH-ROBERTS ASSOCIATES, INC.
5 Lee Street
Cambridge, MA 02139

EXPAND

PDP-11 Operating System: RSX

Keywords: • Compilers • Language enhancers
• Pre- and postprocessors

EXPAND is a FORTRAN preprocessor allowing "include" and "parameter" statements.

Price: \$500 – \$1000

Contact: Madelyn Scheer
(608) 258-8668

CREATIVE SOFTWARE INC.
P.O. Box 3493
Madison, WI 53704

Extension Routines for MU BASIC

PDP-11 Operating System: RT-11

Keywords: • Interpreters • Language enhancers
• Programming tools

Memory required: 27KW.

The extension routines enable additional functions in MU BASIC, such as set time and date, signal wait, input/output of any installed DL line with device timeout capability, pack and unpack float values (single precision) to octal and vice versa, and clear ring buffer. Except for multiuser I/O functions, the extension routines can also be applied under BASIC-11. DECUS number 11-643.

Restrictions: The functions above add about five blocks to the BASIC interpreter. All comments in source are in German.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

Fast Fourier Transform Routine

PDP-11 Operating System: RSX

Keywords: • Data conversion • Real time

This assembly language subroutine performs a 16-bit precision-forward or inverse Fast Fourier Transform of N real-valued data points, where N is a power of 2 in the range $16 (\leq) N (\leq) 2048$. A sample size of 2048 points is transformed in 1.21 seconds on a PDP-11/20 with EAE. Accuracy is preserved by scaling only when overflow occurs. FFTR requires about 1400 words of memory, exclusive of the user-supplied $N + 2$ word buffer, and can be called from FORTRAN under DOS or RSX-11D/M or linked with an assembly language program. Versions

are available for all PDP-11s, and no hardware arithmetic unit is required. However, use of a hardware arithmetic unit greatly improves the speed of FFTR, and special versions of the routine are available for machines equipped with EAE or EIS. DECUS number 11-179.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

FCP (FORTRAN Code Preprocessors)

PDP-11 Operating System: Independent

PRO Operating System: P/OS

Keywords: • Development tools • Programming tools
• Source code control • Translators

FCP is a series of FORTRAN applications designed to clean up FORTRAN source code. Tasks performed include renumbering of statement labels and references that have become unordered due to modification and maintenance, and reindentation of FORTRAN structures.

FCP helps to maintain the structure and legibility of any FORTRAN application. This product is forms driven and designed for both the entry- and advanced-level programmer.

These programs are coded in FORTRAN-77 and have been ported to a wide range of hardware and operating systems.

A version of this product is available for VAX computers.

Price: \$300 - \$10,000

Contact: Francisco Salazar

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LA MESA RESEARCH AND DEVELOPMENT

P.O. Box 31

Louisville, CO 80027

FIXIT: BASIC Translator

PDP-11 Operating System: RSTS, RSX

Keywords: • Application development • Programming tools
• Translators

Memory required: 64KB.

This program assists in converting either BASIC-PLUS-2 Version 1.6 programs or programs written in one of the MicroBASIC implementations into VAX BASIC Version 2 program format. The program can be compiled and run under VAX-11 BASIC or under PDP-11 BASIC-PLUS-2.

The program asks for input and output file names, the type of BASIC, and some formatting information. The program incorporates prettyprinting-indenting to show structure; inserts END IF statements to allow for removal of line numbers; moves MAP, DIM, and COMMON statements to low-numbered statement numbers; and permits blank

insertion for programs with blanks compressed out and removal of backslash characters and unnecessary ampersand characters.

Numerous special-case transformations are available to assist in converting programs written in one of the MicroBASIC dialects. DECUS number 11-686.

Restrictions: This utility does not handle all dependencies of the MicroBASIC systems. Rather, it assists by handling mechanical changes. The program is easy to modify, especially for handling variants of the MicroBASIC implementations.

A version of this product is available for VAX computers.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

FLECS (FORTRAN Language with Extended Control Structures)

PRO Operating System: RT-11

Keywords: • Language enhancers • Source code control
• Translators

This extension of the FORTRAN language provides the control structures necessary to support recent concepts of structured programming. Currently implemented as a translator that converts FLECS programs to FORTRAN, the system is written in FLECS and is easily adaptable to new machines and systems. The entire system, including source code and documentation, is in the public domain.

This release supports PRO-300 computers, but many restrictions make it difficult to compile two of the source files on a PRO. Therefore, the distribution includes these .OBJ files, as well as full source code. DECUS number PRO-113.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

FOCAL RT

PDP-11 Operating System: RT-11

Keywords: • Calculation aids • Programming tools • Scientific
Memory required: 16KW (maximum).

FOCAL is an easy-to-learn interactive programming language ideal for scientists, engineers, and students who are too busy to learn a complex language but need problem-solving capabilities. FOCAL allows calculations and operations to be performed immediately in response to a user command. The user can also string together FOCAL commands to form a program. FOCAL provides a complete set of statements for performing arithmetic operations, program control, and input/output operations. FOCAL/RT-11 is an extension of FOCAL/PTS, which allows the user access to the RT-11 file system for program and data storage retrieval. DECUS number 11-447.

Note: For FOCAL/PTS, see DECUS number 11-454.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

FORTRAN-77 Compiler

PDP-11 Operating System: p-System™

PRO Operating System: p-System™

Keywords: • Compilers • Documentation tools

The FORTRAN-77 Compiler features an ANSI-77 subset and supports structured programming and improved character types. FORTRAN-77 is compatible with UCSD Pascal® and BASIC. A documentation package is included.

p-System™ is a trademark of Pecan Systems, Inc. UCSD Pascal® is a registered trademark of the Regents of the University of California.

Price: \$59.95

Contact: Eli Willner

(718) 851-3100

PECAN SOFTWARE SYSTEMS, INC.

1410 39th Street

Brooklyn, NY 11218

FORTRAN-77 DEBUG/RSX, RSTS/E, IAS

PDP-11 Operating System: IAS, RSTS, RSX

Keywords: • Debugging • Programming tools

These fully symbolic debuggers for FORTRAN-77 and MACRO-11 programs running on RSX-11M and RSX-11M-PLUS, RSTS/E, and IAS, respectively, are tools to aid in finding the location of programming errors in successfully compiled programs that do not execute properly.

These debuggers run as 2-task debuggers. A small portion of the code, necessary to debug applications, is linked with the user task, and the major portion of the debugger runs as a separate task.

The debuggers provide access to program symbols by reading the symbol table file produced by the task builder. The debuggers can understand symbols produced by PDP-11 FORTRAN-77 and MACRO-11.

Refer to SPD #12.78.xx (RSX), SPD #12.79.xx (RSTS/E), or SPD #14.81.xx (IAS) when requesting further information on these products from your local DIGITAL sales office.

Price: \$300 – \$800

Contact: Consult your local DIGITAL sales office (see Introduction).

FORTRAN-77/IAS

PDP-11 Operating System: IAS

Keywords: • Compilers • Language enhancers

An extended implementation of the ANSI subset FORTRAN-77 Standard (X3.9-1978), PDP-11 FORTRAN-77/IAS contains all the features of the ANSI FORTRAN-77 subset, many of the full-set language

features, and extensions that are not included in the ANSI FORTRAN-77 Standard. Switch-selectable support is provided for user programs conforming to the previous ANSI FORTRAN Standard (X3.9-1966).

PDP-11 FORTRAN-77/IAS also meets the Federal Information Processing Standard Publication (FIPS PUB-69) requirement for a flagger. The flagger optionally produces diagnostic messages for syntax and source form elements that do not conform to the full-level ANSI FORTRAN (X3.9-1978) Standard.

Among the major features defined by the new ANSI subset-language FORTRAN standard and not found in either the previous ANSI Standard or previous versions of DIGITAL PDP-11 FORTRAN are CHARACTER data type and block IF construct, including IF...THEN, ELSE IF, ELSE, and END IF statements, for conditional execution of blocks of statements.

The PDP-11 FORTRAN-77 compiler produces direct PDP-11 machine code optimized for execution-time efficiency on a PDP-11 with a floating-point processor. PDP-11 FORTRAN-77 compiler optimizations include optimizations of arithmetic and logical IF statements, common subexpression elimination, removal of invariant expressions from DO loops, and allocation of processor registers across block IF constructs and DO loops.

The PDP-11 FORTRAN-77/IAS Object Time System (OTS) is a set of object modules that are selectively linked with compiler-produced object modules by the operating system's task builder, to produce a task (program) ready for execution.

Refer to SPD #14.50.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$5740 - \$30,000

Contact: Consult your local DIGITAL sales office (see Introduction).

FORTRAN-77/RSTS/E

PDP-11 Operating System: RSTS

Keywords: • Compilers • Diagnostics • Language enhancers

This extended implementation of the ANSI subset FORTRAN-77 Standard (X3.9-1978) contains all the features of ANSI FORTRAN-77 subset, many of the full-set language features, and extensions that are not included in the ANSI FORTRAN-77 Standard. Switch-selectable support is provided for user programs conforming to the previous ANSI FORTRAN Standard (X3.9-1966). PDP-11 FORTRAN-77/RSTS/E includes all subset ANSI features, including CHARACTER data type and block IF construct, including IF...THEN, ELSE IF, ELSE, and END IF statements, for conditional execution of blocks of statements.

PDP-11 FORTRAN-77/RSTS/E also meets the Federal Information Processing Standard Publication (FIPS PUB-69) requirement for a

flagger. The flagger optionally produces diagnostic messages for syntax and source form elements that do not conform to the full-level ANSI FORTRAN (X3.9-1978) Standard.

PDP-11 FORTRAN-77/RSTS/E programs can be optionally executed under control of PDP-11 FORTRAN-77 DEBUG/RSTS/E (SPD #12.79.xx). Execution of application programs using PDP-11 FORTRAN-77 DEBUG aids in the location of programming errors in successfully compiled programs that behave abnormally when executed.

The PDP-11 FORTRAN-77 compiler produces direct PDP-11 machine code optimized for execution-time efficiency on a PDP-11 with a floating-point processor. PDP-11 FORTRAN-77 compiler optimizations include optimizations of arithmetic and logical IF statements, common subexpression elimination, removal of invariant expressions for DO loops, and allocation of processor registers across block IF constructs and DO loops.

The PDP-11 FORTRAN-77/RSTS/E Object Time System (OTS) is a set of object modules that are selectively linked with compiler-produced object modules by the operating system's task builder, to produce a task (program) ready for execution.

Refer to SPD #14.49.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200 - \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

FORTRAN-77/RSX

PDP-11 Operating System: RSX

Keywords: • Compilers • Diagnostics • Language enhancers

This extended implementation of the ANSI subset FORTRAN-77 standard (X3.9-1978) runs on the RSX-11M and RSX-11M-PLUS operating systems. Run-time operations are supported on RSX-11S. PDP-11 FORTRAN-77/RSX contains all the features of the ANSI FORTRAN-77 subset, many of the full-set language features, and extensions that are not included in the ANSI FORTRAN-77 standard. Switch-selectable support is provided for user programs based on the previous ANSI FORTRAN standard (X3.9-1966).

PDP-11 FORTRAN-77/RSX meets the FIPS PUB-69 requirement for a flagger. The flagger optionally produces diagnostic messages for syntax and source form elements that do not conform to the full-level ANSI FORTRAN X3.9-1978 standard.

Among the major features defined by the new ANSI subset-language FORTRAN standard and not found in either the previous ANSI standard or previous versions of DIGITAL PDP-11 FORTRAN are CHARACTER data type and the Block IF construct, including IF...THEN, ELSE IF, ELSE, and END IF statements, for conditional execution of blocks of statements.

Refer to SPD #14.31.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200 – \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

FORTRAN-77/RT-11

PDP-11 Operating System: RT-11

Keywords: • Compilers • Language enhancers

This modification of PDP-11 FORTRAN-77/RSX enables its operation with RT-11, Version 4 or later. The changes were made to reflect the different operating system environment — primarily the lack of an RMS with RT-11. The changes were designed and implemented by Multiware, Inc., under contract to DIGITAL.

An extended implementation of the ANSI subset FORTRAN-77 Standard (X3.9-1978) that runs on the RT-11 operating system, FORTRAN-77/RT-11 contains all the features of the ANSI FORTRAN-77 subset, many of the full-set language features, and extensions that are not included in the ANSI FORTRAN-77 Standard. Switch-selectable support is provided for user programs based on the previous ANSI FORTRAN Standard (X3.9-1966).

This product meets the Federal Information Processing Standard Publication (FIPS PUB-69) requirement for a flagger. The flagger optionally produces diagnostic messages for syntax and/or source form elements that do not conform to the full-level ANSI FORTRAN (X3.9-1978) Standard.

Refer to SPD #A3.55.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$700 – \$1075

Contact: Consult your local DIGITAL sales office (see Introduction).

FORTRAN Interface to IAS Subtasking

PDP-11 Operating System: IAS

Keywords: • Compilers • Language enhancers
• Presentation aids

This 2-part package consists of a FORTRAN-callable interface to the TCS subtasking macros supported in Version 3 of IAS and a demonstration program that implements an EXEecute command. The latter permits compilation or assembly, linking, and running user-written programs with a single PDS-format command. DECUS number 11-414.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

FORTRAN IV/IAS**PDP-11 Operating System:** IAS**Keywords:** • Compilers • Language enhancers

An extended implementation of the FORTRAN language based on the ANSI FORTRAN (X3.9-1966) Standard, PDP-11 FORTRAN IV includes the following extensions of the ANSI Standard: general expressions allowed in all meaningful contexts; mixed-mode arithmetic; BYTE data type for character manipulation; ENCODE, DECODE, DEFINE FILE, and PROGRAM statements; PRINT, TYPE, and ACCEPT input/output statements; direct-access unformatted input/output; comments allowed at the end of each source line; OPEN and CLOSE file access control statements; and list-directed input/output.

Additionally, virtual arrays are supported on systems with memory-management directives. Virtual arrays are memory resident and require enough main memory to contain all elements of all arrays.

The PDP-11 FORTRAN IV compiler is a fast 1-pass compiler. Compiler options allow program size versus execution speed (threaded code versus in-line code) tradeoffs. FORTRAN IV compiler optimizations include common subexpression elimination, local code tailoring, array vectoring, and optional in-line code generation for integer and logical operations.

MACRO-11 assembly language subroutines can be called from FORTRAN IV programs.

FORTRAN IV includes a set of object modules, called the Object Time System (OTS), that are selectively linked with compiler-produced object modules to produce an executable program.

Refer to SPD #14.77.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$700 - \$860**Contact:** Consult your local DIGITAL sales office (see Introduction).**FORTRAN IV/RSTS/E****PDP-11 Operating System:** RSTS**Keywords:** • Compilers • Language enhancers

An extended implementation of the FORTRAN language based on the ANSI FORTRAN (X3.9-1966) Standard, the PDP-11 FORTRAN IV language includes the following extensions to the ANSI Standard: general expressions allowed in all meaningful contexts; mixed-mode arithmetic; BYTE data type for character manipulation; ENCODE, DECODE, and PROGRAM statements; PRINT, TYPE, and ACCEPT input/output statements; direct-access unformatted input/output DEFINE FILE statements; comments allowed at the end of each source line; OPEN and CLOSE file-access control statements; and list-directed input/output.

The PDP-11 FORTRAN IV compiler is a fast 1-pass compiler. Compiler options allow program size versus execution speed (threaded code versus in-line code) tradeoffs. FORTRAN IV compiler optimizations include common subexpression elimination, local code tailoring, array vectoring, and optional in-line code generation for integer and logical operations. FORTRAN IV can optionally generate code for the following arithmetic instructions sets: EIS, FIS, EAE, and FPU.

FORTRAN IV includes a set of object modules, called the Object Time System (OTS), that is selectively linked with compiler-produced object modules to produce an executable program.

The RSTS/E system provides several special features for FORTRAN IV. FORTRAN programs can be developed under RSTS/E and output in absolute binary format for execution on a stand-alone PDP-11 system with minimal peripherals or for loading into ROM or PROM memory.

Although MACRO-11 assembly language subroutines can be invoked from FORTRAN IV programs, no facility is provided for monitor communication or input/output from within those MACRO subprograms.

Refer to SPD #12.41.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$700

Contact: Consult your local DIGITAL sales office (see Introduction).

FORTRAN IV/RSX

PDP-11 Operating System: RSX

Keywords: • Compilers • Language enhancers

FORTRAN IV, an extended implementation of the FORTRAN language based on the ANSI FORTRAN (X3.9-1966) Standard, operates under the RSX-11M and RSX-11M-PLUS operating systems. The PDP-11 FORTRAN IV language includes the following extensions of the ANSI Standard: general expressions allowed in all meaningful contexts; mixed-mode arithmetic; BYTE data type for character manipulation; ENCODE, DECODE, DEFINE FILE, and PROGRAM statements; PRINT, TYPE, and ACCEPT input/output statements; direct-access unformatted input/output; comments allowed at the end of each source line; OPEN and CLOSE file access control statements; and list-directed input/output.

Additional virtual arrays are supported on systems with memory-management directives. Virtual arrays are memory resident and require enough main memory to contain all elements of all arrays.

The PDP-11 FORTRAN IV compiler is a fast 1-pass compiler. Compiler options allow program size versus execution speed (threaded code versus in-line code) tradeoffs. FORTRAN IV compiler optimizations include common subexpression elimination, local code tailoring, array vectoring, and optional in-line code generation for integer and logical operations.

MACRO-11 assembly language subroutines can be called from FORTRAN IV programs.

FORTRAN IV can optionally generate code for the following arithmetic instructions sets: EIS, FIS, EAE, and FPU.

FORTRAN IV includes a set of object modules, called the Object Time System (OTS), that are selectively linked with compiler-produced object modules to produce an executable program.

Refer to SPD #14.63.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$700

Contact: Consult your local DIGITAL sales office (see Introduction).

FORTRAN IV/RT-11

PDP-11 Operating System: RT-11

PRO Operating System: RT-11

Keywords: • Compilers • Language enhancers

An extended implementation of the FORTRAN language based on the ANSI FORTRAN (X3.9-1966) Standard, FORTRAN IV/RT-11 includes the following extensions of the ANSI Standard: general expressions allowed in all meaningful contexts; mixed-mode arithmetic; BYTE data type for character manipulation; ENCODE, DECODE, and PROGRAM statements; PRINT, TYPE, and ACCEPT input/output statements; direct-access unformatted input/output; DEFINE FILE comments allowed at end of each source line; OPEN and CLOSE file-access control statements; and list-directed input/output.

Additionally, virtual arrays are supported on systems with memory-management directives. Virtual arrays are memory resident and require enough main memory to contain all elements of all arrays.

The FORTRAN IV/RT-11 compiler is a fast, 1-pass compiler. Compiler options allow program size versus execution speed (threaded code versus in-line code) tradeoffs. FORTRAN IV compiler optimizations include common subexpression elimination, local code tailoring, array vectoring, and optional in-line code generation for integer and logical operations.

Refer to SPD #12.10.xx (PDP-11) or 40.40.xx (Professional) when requesting further information on this product from your local DIGITAL sales office.

Price: \$495 - \$640

Contact: Consult your local DIGITAL sales office (see Introduction).

FORTRIX-C (FORTRAN to C Translator)

PDP-11 Operating System: RSTS, RSX, RT-11, ULTRIX-11

Keywords: • Compilers • Translators

Memory required: 500K.

FORTRIX-C, written in C, translates FORTRAN code to C code so that input data files remain compatible with the new C program. The FORTRAN comment lines are translated in place so that internal documentation is retained. The generated C code is fully structured and easily readable and therefore easily maintained and updated. The resulting C program typically runs 15% to 30% faster than the original FORTRAN.

FORTRIX-C is supplied complete and runs as is. Special programs needed to account for different UNIX* environments or for use by more experienced programmers are supplied. Those programs are documented for each hardware configuration but generally include integer character string converters, space allocators, string parsers, and other string manipulators not available in the standard C libraries.

A version of this product is available for VAX computers.

Price: \$4200 - \$4700

Contact: Jim Flynn

(212) 687-6255 or (800) FORTRIX or Telex: 509210

RAPITECH SYSTEMS, INC.

565 Fifth Avenue

New York, NY 10017

HCR/BASIC

PDP-11 Operating System: UNITY

Keywords: • Graphics • Interpreters • Language enhancers

HCR/BASIC, an interpreter designed for the UNIX* environment, invokes standard UNIX* utilities or other programs. **HCR/BASIC** conforms to the ANSI Standard (X3.60-1978) and includes powerful extensions, as well as full support for strings, string variables, and mid\$, left\$, right\$, space\$, and str\$.h functions. **HCR/BASIC** also has Tektronix line-drawing graphics commands and supports sequential- and random-access files.

HCR/BASIC runs only on the PDP-11 series; for small PDP-11s, **HCR** text overlay software is required.

* UNIX is a trademark of AT&T Bell Laboratories.

Price: \$750 +

Contact: Sales Department

(714) 493-8664

HUMAN COMPUTING RESOURCES CORP.

10 St. Mary Street, Fourth Floor

Toronto, Ontario M4Y 1P9 Canada

HCR/Pascal

PDP-11 Operating System: UNITY

Keywords: • Assemblers • Compilers • Pre- and postprocessors

HCR/Pascal conforms to the ISO (1981) draft standard and the ANSI standard for Pascal processors. **HCR/Pascal** lets you use UNIX* system

calls, subroutines, and libraries. This UNIX*-compatible implementation of the complete UCSD string package features efficient compiled code and a macro preprocessor with all the properties of the C preprocessor.

* UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for VAX computers.

Price: \$1000 +

Contact: Sales Department
(714) 493-8664

HUMAN COMPUTING RESOURCES CORP.
10 St. Mary Street
Toronto, Ontario M4Y 1P9 Canada

HOL77 Precompiler for DIGITAL's FORTRAN-77

PDP-11 Operating System: RSX

Keywords: • Compilers • Pre- and postprocessors
• Programming tools

Memory required: 15KW.

HOL77 enables the programmer to supplement a FORTRAN-77 program with additional flow control structures: WHILE (condition), Do loops, REPEAT UNTIL (condition) loops, CASE statements, DOLOOPS (without the need for a label), and BEGIN-END statements (purely for cosmetics). Input files end with .S4T, and output files end with .FTN. The only labels a programmer needs to use are for FORMAT statements and End of File conditions. The HOL77 is supplied with its own source code (written in FORTRAN-77), command files to compile and task build it, its TASK image, flow control structure syntax documentation, and a sample .S4T input file. DECUS number 11-521.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

IFTRAN Precompiler for PDP-11 FORTRAN

PDP-11 Operating System: RSX

Keywords: • Compilers • Language enhancers
• Pre- and postprocessors • Programming tools

Memory required: 16K.

IFTRAN is an extension of the basic set of instructions to the FORTRAN programming language. The addition of four simple types of clauses (IF, DO-UNTIL, WHILE, and FOR) to FORTRAN allows the writing of structured programs. Features of IFTRAN include OR, IF, and ELSE subclauses; loop exits on logical conditions; multiple statements on a single line; in-line comments; optional pass-through of full-line comments to the output FORTRAN file; listing control; and "pretty-printed" listings. IFTRAN avoids much of the unused richness of most structured FORTRAN compilers in favor of a quick translation

of an easily learned, practical set of extensions. DECUS number 11-481.

Restrictions: The bootstrap precompiler does not produce as extensive diagnostics as the IFTRAN precompiler.

Note: IFTRAN should run under any RSX emulator incorporating features of RSX-11M V3.2.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

INDEX: FORTRAN Cross-Referencer

PDP-11 Operating System: RSX, RT-11

Keywords: • Language enhancers • Programming tools
• Text management

Memory required: 24K partition minimum for RSX; 16K for RT-11.

This cross-referencing program does for FORTRAN what CREF does for MACRO. A source program run through INDEX is checked for its variable name and label usage. The results are then listed in alphabetical order — the variable names and labels used in the program, the lines on which they were used, and how they were used. If necessary, the variables from specified programs can be saved along with those of other programs and later printed out as a superindex giving the variable name and the names of the programs in which it was used. Also included is the capability to exclude from the index listing variables that appear only once in a program in a common block or type declaration but that are not used elsewhere (or list only those, if wanted). The user can also list only those variables that are global (defined in a common block) or those that are local.

INDEX handles programs written in FORTRAN IV, FORTRAN IV PLUS in accordance with the *PDP-11 FORTRAN Language Reference Manual* (DEC-11-LFLRA-C-D), and the FORTRAN 1977 standard. DECUS number 11-229.

Note: When ordering, RSX-11 users must specify that the magtape be in DOS format. The following improvements have been made: bug fixes, new switches, inclusion of FORTRAN-77 standards, and modifications so that the program will run under RSX-11M as well as under RT-11.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

INDEX: FORTRAN Cross-Referencer

PRO Operating System: RT-11

Keywords: • Language enhancers • Programming tools
• Text management

Memory required: 24KW.

This cross-referencing program does for FORTRAN what CREF does for MACRO. A source program run through INDEX will be checked for

all of its variable name and label usage: the names and labels used in the program, the lines on which they were used, and how they were used. If needed, the variables from the specified programs can be saved along with those of other programs and later printed out as a super-index giving variable names and the names of all the programs it was used in. Also included is the capability to exclude from the index listing all variables that appear only once in a program in a common block or type declaration but are not used elsewhere (or list only those if wanted). The user can also list only those variables that are global (defined in a common block) or those that are local. DECUS number PRO-110.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

JMI Portable C Library

PDP-11 Operating System: RSX, RT-11, ULTRIX-11

Keywords: • Development tools • File management

This comprehensive portable library, written in C, contains routines equivalent to those found in both the standard C library (as described in *The C Programming Language*, by Kernighan and Ritchie and found in most UNIX* systems) and the Whitesmiths, Ltd., Portable C Runtime Library. The JMI Portable C Library is designed for implementing ROMable systems, sharing functions among processes, and restarting memory-resident systems without reloading. Most standard libraries lack those features, which are vital for designing embedded systems.

A version of this product is available for VAX computers.

Price: \$5000

Contact: Anita Fitzgibbons

(215) 628-0846

JMI SOFTWARE CONSULTANTS

904 Sheble Lane

Spring House, PA 19477

LALR (1) Parser Constructor to Translate Computer Languages

PDP-11 Operating System: RSX

Keywords: • Compilers • Programming tools • Translators

Memory required: 10K to 32K words.

LALR constructs a compacted LALR (1) parser from a description of a context-free language, which may then be used as the basis for a compiler for that language. LALR (1) grammars encompass a large subset of LR (1) grammars and include most common languages, such as ALGOL, FORTRAN, and BASIC. LR (K) parsers are the most efficient parsers known for a large subset of grammars in terms of both space

and time. Input to the LALR program is a Backus-Naur form representation of the target grammar; output is a state table in MACRO assembler or absolute form. DECUS number 11-312.

Restrictions: 128 rules maximum in grammar.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

LISP for RSX-11

PDP-11 Operating System: IAS, RSX

Keywords: • Language enhancers • Pre- and postprocessors

Memory required: 10K-28K.

This version of LISP is written in PDP-11 MACRO with a minimum of system calls and therefore is fairly easy to adapt to other operating systems. LISP should work as is on all RSX-11M, RSX-11D, and IAS systems. The TKB command file must be edited for RSX-11M to reflect the difference in the system use of a program's low-address space. The TKB file may also be edited to change the size of the dynamic node pool and the stack sizes.

The support programs "LINT" and "SAVLSP" are also in this package. Both programs were written in the FORTRAN preprocessor FLECS, available as DECUS number 10-293. The resulting FORTRAN code is also here. "LINT" is very handy for producing a readable LISP program and eliminating those bugs due to miscounting parentheses. System-dependent SAVLSP works on an IAS system but has not yet been tried on RSX-11D or RSX-11M. DECUS number 11-433.

Note: See RSTS-11-147 for the RSTS version of LISP11.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

LISP11 for RSTS

PDP-11 Operating System: RSTS

Keywords: • Compilers • Interpreters

This interpreter for the LISP language is a modification of LISP11 (DECUS number 11-304), which will run under RSTS, using the RT-11 emulator. A total of 126 LISP functions are implemented, with conditional assembly provisions permitting the removal of as many as 61 in order to maximize free space. DECUS number 11-347.

The source code can be conditionally compiled for RT-11 as well as for RSTS.

This version of the LISP interpreter has been modified to run under RSTS/E V7.0-07. The documentation for this version describes only the features that differ from the original implementation or that may not be familiar to RSTS users. For full information on the program, order DECUS number 11-304 Write-Up (AC).

Price: \$5 - \$225

Contact: DECUS (see Introduction)

LISP11 for RT-11**PDP-11 Operating System:** RT-11**Keywords:** • Compilers • Interpreters

Memory required: 16K.

This interpreter for the LISP language runs in the background under RT-11. About 125 LISP functions are implemented, with a provision to conditionally remove as many as 60 in order to maximize free space. DECUS number 11-304.

Price: \$5 - \$225**Contact:** DECUS (see Introduction)**MACRO-05 MC6805 Cross-Development Tools****PDP-11 Operating System:** IAS, RSX, RT-11, ULTRIX-11**Keywords:** • Cross-assemblers • Development tools
• Microprocessor development • Programming tools

The relocating cross-assembler (MACRO-05), multifunction linker (LINK-05), and object librarian (LIBRRN) provide a comprehensive cross-development facility for RAM- and ROM-based 6805 systems. MACRO-05 features MACRO-11 pseudoops, manufacturer/DIGITAL-style mnemonics, MACRO-11 macro capability, and full 6805 support. LINK-05 provides ROM/RAM segmentation based on .PSECT directives, with output in binary, Motorola, Intel, Tektronix, and other formats. LIBRRN provides a compact storage and retrieval capability for relocatable object modules.

The package is written in structured MACRO-11, with identical specifications across operating systems. Dynamic memory-expansion techniques are used when supported by the operating system. The RSX and VMS (AME) implementations offer a virtual symbol table for unlimited symbol table storage. The binary license fee includes renewable support. Documentation is included.

A version of this product is available for VAX computers.

Price: \$1000**Contact:** Arthur Gaughan
(215) 699-9658

SKIPPACK SYSTEMS GROUP

P.O. Box 1595

North Wales, PA 19454

MACRO-09 MC6809 Cross-Development Tools**PDP-11 Operating System:** IAS, RSX, RT-11, ULTRIX-11**Keywords:** • Cross-assemblers • Development tools
• Microprocessor development • Programming tools

The relocating cross-assembler (MACRO-09), structured assembly language (SCAT-09), multifunction linker (LINK-09), and object librarian (LIBRRN) provide a comprehensive cross-development facility for RAM- and ROM-based 6809 systems. MACRO-09 features

MACRO-11 pseudoops, manufacturer/DIGITAL-style mnemonics, MACRO-11 macro capability, and MC6809 support. SCAT-09 provides IF..THEN..ELSE, REPEAT..UNTIL, WHILE..DO, CASE..ELSE, and logical and arithmetic constructs, with unary and binary operators. LINK-09 provides ROM/RAM segmentation based on .PSECT directives, with output in binary, Motorola, Intel, Tektronix, and other formats. LIBRRN provides a compact storage and retrieval capability for relocatable object modules.

The package is written in structured MACRO-11, with identical specifications across operating systems. Dynamic memory-expansion techniques are used when supported by the operating system. The RSX and VMS (AME) implementations offer a virtual symbol table for unlimited symbol table storage. The binary license fee includes renewable support. Documentation is included.

A version of this product is available for VAX computers.

Price: \$1000

Contact: Arthur Gaughan
(215) 699-9658

SKIPPACK SYSTEMS GROUP
P.O. Box 1595
North Wales, PA 19454

MACRO-65 6502 Cross-Development Tools

PDP-11 Operating System: IAS, RSX, RT-11, ULTRIX-11

Keywords: • Cross-assemblers • Development tools
• Microprocessor development • Programming tools

The relocating cross-assembler (MACRO-65), multifunction linker (LINK-65), and object librarian (LIBRRN) provide a comprehensive cross-development facility for RAM- and ROM-based 6502 systems. MACRO-65 features MACRO-11 pseudoops, manufacturer/DIGITAL-style mnemonics, MACRO-11 macro capability, and full 6502 support. LINK-65 provides ROM/RAM segmentation based on .PSECT directives, with output in binary, Motorola, Intel, Tektronix, and other formats. LIBRRN provides a compact storage and retrieval capability for relocatable object modules.

The package is written in structured MACRO-11, with identical specifications across operating systems. Dynamic memory-expansion techniques are used when supported by the operating system. The RSX and VMS (AME) implementations offer a virtual symbol table for unlimited symbol table storage. The binary license fee includes renewable support. Documentation is included.

A version of this product is available for VAX computers.

Price: \$1000

Contact: Arthur Gaughan
(215) 699-9658

SKIPPACK SYSTEMS GROUP

P.O. Box 1595

North Wales, PA 19454

MACRO-68 MC68000/10 Cross-Development Tools**PDP-11 Operating System:** IAS, RSX, RT-11, ULTRIX-11**Keywords:** • Cross-assemblers • Development tools
• Microprocessor development • Programming tools

The relocating cross-assembler (MACRO-68), structured assembly language (SCAT-68), multifunction linker (LINK-68), and object librarian (LIBRRN) provide a cross-development facility for RAM- and ROM-based 68000/10 systems. MACRO-68 features MACRO-11 pseudoops, manufacturer/DIGITAL-style mnemonics, MACRO-11 macro capability, and full MC68000/08/10 support. SCAT-68 provides IF..THEN..ELSE, REPEAT..UNTIL, WHILE..DO, CASE..ELSE, and logical and arithmetic constructs with unary and binary operators. LINK-68 provides ROM/RAM segmentation based on .PSECT directives, with output in binary, Motorola, Intel, Tektronix, and other formats. LIBRRN provides a compact storage and retrieval capability for relocatable object modules.

The package is written in structured MACRO-11, with identical specifications across operating systems. Dynamic memory-expansion techniques are used when supported by the operating system. The RSX and VMS (AME) implementations offer a virtual symbol table for unlimited symbol table storage. The binary license fee includes renewable support. Documentation is included.

A version of this product is available for VAX computers.

Price: \$1500**Contact:** Arthur Gaughan
(215) 699-9658**SKIPPACK SYSTEMS GROUP**

P.O. Box 1595

North Wales, PA 19454

MACRO-80 8080/8085 Cross-Development Tools**PDP-11 Operating System:** IAS, RSX, RT-11, ULTRIX-11**Keywords:** • Cross-assemblers • Development tools
• Microprocessor development • Programming tools

The relocating cross-assembler (MACRO-80), multifunction linker (LINK-80), and object librarian (LIBRRN) provide a comprehensive cross-development facility for RAM- and ROM-based 8080/8085 systems. MACRO-80 features MACRO-11 pseudoops, manufacturer/DIGITAL-style mnemonics, MACRO-11 macro capability, and full 8080/8085 support. LINK-80 provides ROM/RAM segmentation based on .PSECT directives, with output in binary, Motorola, Intel, Tektronix, and other formats. LIBRRN provides a compact storage and retrieval capability for relocatable object modules.

The package is written in structured MACRO-11, with identical specifications across operating systems. Dynamic memory-expansion techniques are used when supported by the operating system. The RSX and VMS (AME) implementations offer a virtual symbol table for unlimited symbol table storage. The binary license fee includes renewable support. Documentation is included.

A version of this product is available for VAX computers.

Price: \$1000

Contact: Arthur Gaughan

(215) 699-9658

SKIPPACK SYSTEMS GROUP

P.O. Box 1595

North Wales, PA 19454

MACRO-86 8086/8088 Cross-Development Tools

PDP-11 Operating System: IAS, RSX, RT-11, ULTRIX-11

Keywords: • Cross-assemblers • Development tools

• Microprocessor development • Programming tools

The relocating cross-assembler (MACRO-86), multifunction linker (LINK-86), and object librarian (LIBRRN) provide a comprehensive cross-development facility for RAM- and ROM-based 8086/8088 systems. MACRO-86 features MACRO-11 pseudoops, manufacturer/DIGITAL-style mnemonics, MACRO-11 macro capability, and full 8086/8088 support. LINK-86 provides ROM/RAM segmentation based on .PSECT directives, with output in binary, Motorola, Intel, Tektronix, and other formats. LIBRRN provides a compact storage and retrieval capability for relocatable object modules.

The package is written in structured MACRO-11, with identical specifications across operating systems. Dynamic memory-expansion techniques are used when supported by the operating system. The RSX and VMS (AME) implementations offer a virtual symbol table for unlimited symbol table storage. The binary license fee includes renewable support. Documentation is included.

A version of this product is available for VAX computers.

Price: \$1500

Contact: Arthur Gaughan

(215) 699-9658

SKIPPACK SYSTEMS GROUP

P.O. Box 1595

North Wales, PA 19454

MACRO-8K Z-8000/1/2/3/4 Cross-Development Tools

PDP-11 Operating System: IAS, RSX, RT-11, ULTRIX-11

Keywords: • Cross-assemblers • Development tools

• Microprocessor development • Programming tools

The relocating cross-assembler (MACRO-8K), structured assembly language (SCAT-8K), multifunction linker (LINK-8K), and object

librarian (LIBRRN) provide a comprehensive cross-development facility for RAM- and ROM-based Z8000 systems. MACRO-8K features MACRO-11 pseudoops, manufacturer/DIGITAL-style mnemonics, MACRO-11 macro capability, and full Z8000/1/2/3/4 support. SCAT-8K provides IF.THEN.ELSE, REPEAT.UNTIL, WHILE.DO, CASE.ELSE, and logical and arithmetic constructs with unary and binary operators. LINK-8K provides ROM/RAM segmentation based on .PSECT directives, with output in binary, Motorola, Intel, Tektronix, and other formats. LIBRRN provides a compact storage and retrieval capability for relocatable object modules.

The package is written in structured MACRO-11, with identical specifications across operating systems. Dynamic memory-expansion techniques are used when supported by the operating system. The RSX and VMS (AME) implementations offer a virtual symbol table for unlimited symbol table storage. The binary license fee includes renewable support. Documentation is included.

A version of this product is available for VAX computers.

Price: \$1500

Contact: Arthur Gaughan
(215) 699-9658

SKIPPACK SYSTEMS GROUP
P.O. Box 1595
North Wales, PA 19454

MACRO-MC MC6800/01/02/03/08 Cross-Development Tools

PDP-11 Operating System: IAS, RSX, RT-11, ULTRIX-11

Keywords: • Cross-assemblers • Development tools
• Microprocessor development • Programming tools

The relocating cross-assembler (MACRO-MC), multifunction linker (LINK-MC), and object librarian (LIBRRN) provide a cross-development facility for RAM- and ROM-based 680x systems. MACRO-MC features MACRO-11 pseudoops, manufacturer/DIGITAL-style mnemonics, MACRO-11 macro capability, and full 6800/01/02/03/08 support. LINK-MC provides ROM/RAM segmentation based on .PSECT directives, with output in binary, Motorola, Intel, Tektronix, and other formats. LIBRRN provides a compact storage and retrieval capability for relocatable object modules.

The package is written in structured MACRO-11, with identical specifications across operating systems. Dynamic memory-expansion techniques are used when supported by the operating system. The RSX and VMS (AME) implementations offer a virtual symbol table for unlimited symbol table storage. The binary license fee includes renewable support. Documentation is included.

A version of this product is available for VAX computers.

Price: \$1000

Contact: Arthur Gaughan
(215) 699-9658

SKIPPACK SYSTEMS GROUP

P.O. Box 1595

North Wales, PA 19454

MACRO Package for MACRO-11 to Assemble INTEL 8008 Code

PDP-11 Operating System: RT-11

Keywords: • Assemblers • Language enhancers

This set of MACRO routines interprets DIGITAL MPS (Intel 8008) mnemonics. The output consists of two files; one contains the binary image of the object, and the other contains the assembly listing. DECUS number 11-290.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

MACRO Package for MACRO-11 to Assemble INTEL 8080 Code

PDP-11 Operating System: RT-11

Keywords: • Assemblers • Debugging • Language enhancers

This set of MACRO-11 macros interprets INTEL 8080 mnemonics. As usual in MACRO-11, the output consists of two files: the binary image of the object and the assembly listing of the assembled program. Two sample programs are also included; the first program is an 8080 resident load/debugger; the second, an amateur radio station Morse/Rtty input/output and station log maintainer. DECUS number 11-403.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

MACRO Package for MACRO-11 to Assemble Motorola 680X Code

PDP-11 Operating System: RT-11

Keywords: • Assemblers • Interpreters • Language enhancers
• Programming tools

Memory required: 28KW.

This package contains four sets of MACRO-11 macros to interpret Motorola 6800/6802 and 6808, 6801/6803, 6805, and 6809 mnemonics. As is normal in MACRO-11, the output may contain two files; one contains the binary image of the object in .LDA form, and the other contains the assembly listing of the assembled program. A program called LISTER reads .LDA format files and prints the binary data in octal, decimal, or hex formats. A second program, HEXDCM, can be used to process the .LST file to produce decimal or hex listings from the MACRO-11-generated octal listings.

Several 6800 and 6809 programs are included as coding examples: LOADER, a DIGITAL .LDA format absolute binary loader for the 6800; 6821A, a general-purpose Motorola 6821 PIA I/O handler (6800 code); 8250A, a general-purpose National INS8250 ACE serial-port I/O

handler (6800 code); MC6845, a general-purpose Motorola 6845 CRT controller handler (6809 code); and NS8250, a general-purpose National INS8250 ACE serial-port handler (6809 code). DECUS number 11-663.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

MACRO Package for MACRO-11 to Assemble Signetics 2650 Code

PDP-11 Operating System: RT-11

Keywords: • Assemblers • Language enhancers

This set of MACRO routines interprets Signetics 2650 mnemonics. The output consists of two files; one contains the binary image of the object, and the other contains the assembly listing. DECUS number 11-291.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

MACRO-Z8 Z-80 Cross-Development Tools

PDP-11 Operating System: IAS, RSX, RT-11, ULTRIX-11

Keywords: • Cross-assemblers • Development tools
• Microprocessor development • Programming tools

The relocating cross-assembler (MACRO-Z8), multifunction linker (LINK-Z8), and object librarian (LIBRRN) provide a comprehensive cross-development facility for RAM- and ROM-based Z-80 systems. MACRO-Z8 features MACRO-11 pseudoops, manufacturer/DIGITAL-style mnemonics, MACRO-11 macro capability, and full Z-80 support. LINK-Z8 provides ROM/RAM segmentation based on .PSECT directives, with output in binary, Motorola, Intel, Tektronix, and other formats. LIBRRN provides a compact storage and retrieval capability for relocatable object modules.

The package is written in structured MACRO-11, with identical specifications across operating systems. Dynamic memory-expansion techniques are used when supported by the operating system. The RSX and VMS (AME) implementations offer a virtual symbol table for unlimited symbol table storage. The binary license fee includes renewable support. Documentation is included.

A version of this product is available for VAX computers.

Price: \$1000

Contact: Arthur Gaughan
(215) 699-9658

SKIPPACK SYSTEMS GROUP
P.O. Box 1595
North Wales, PA 19454

MacroVAX

PDP-11 Operating System: RSX

Keywords: • Diagnostics • Programming tools • Translators

This collection of programs translates source programs from MACRO-11 assembly language to VAX-11 MACRO assembly language and handles macros, conditional assembly, radix conversion, repeat blocks, multiple sections, and symbolic assignments, as well as machine instructions and data declarations. The resulting VAX code retains the original comments, is understandable, and can be maintained without referring to the original PDP-11 program(s).

MacroVAX automatically separates PDP-11 programs into code and data areas and models the PDP-11 stack in the data area. Programs can be any size, but data is limited to a 64KB area. PDP-11 registers are modeled using the VAX registers R0-R6 and PC.

The code translation is very efficient, with a significant degree of optimization. MacroVAX uses multiple passes to eliminate unneeded instructions, particularly as they relate to the setting and testing of condition-code values.

MacroVAX can translate 98% or more of a PDP-11 assembly language program automatically. Error messages and warnings clearly indicate which PDP-11 statements require programmer attention. MacroVAX has been successfully used to translate complicated programs with a minimum of programmer effort.

A version of this product is available for VAX computers.

Price: \$10,000

Contact: Ralph W. Swearingen

(415) 935-4944

VIRTUAL SYSTEMS, INC.

1500 Newell Avenue, Suite 406

Walnut Creek, CA 94596

MACSP (MACRO-11/SP Structured Programming Macros)

PDP-11 Operating System: IAS, RSX, RT-11

Keywords: • Assemblers • Language enhancers

• Programming tools

The MACRO-11/SP set of MACRO-11 macros provides a concise, comprehensive set of control structures for assembler programs. The facilities provided are IF...ELSE..FI, LOOP..REPEAT, CASE...CASEND, PROC...END, and CALL. The facilities are specified so as to be efficiently implemented by in-line code; resulting programs are as good as they would be if coded by hand within the same structural constraints. At the same time, the structures are simple to use.

Use of MACRO-11/SP provides a significant payoff in increased programming efficiency, with negligible loss of run-time efficiency. DECUS number 11-339.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

MACSUB: RSX-11M MACRO Subroutines

PDP-11 Operating System: RSX

Keywords: • Programming tools

MACSUB contains seven MACRO-11 subroutines that manipulate character strings and are callable from F4P and F77 FORTRAN programs. Documentation is included in the file SUBR.DOC. All files are in [100,1]. DECUS number 11-642.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

MAGIC/L™

PDP-11 Operating System: RT-11

PRO Operating System: RT-11

Keywords: • Compilers • Development tools
• Programming tools • Software utilities

Memory required: 64K bytes.

MAGIC/L is a programming language and software development environment that gives developers fast, interactive access to their entire system. Applications ranging from hardware interface software to data base management are developed quickly as the user moves easily from initial prototype through debugging and refinement to final product. All of MAGIC/L's features and facilities are positioned to maximize productivity by minimizing interface problems and waiting time.

MAGIC/L is based on a fully interactive high-level compiler; statements are compiled as they are entered and thus can be executed immediately. The language is modular and structured, using a C-like syntax, and an in-line assembler allows the user to develop and debug low-level or time-critical facilities at the keyboard. MAGIC/L provides direct access to all system calls and CLI commands; system calls can be accessed as though they were a part of the language, while command access allows use of a favored editor or other system utility.

MAGIC/L is an extensible language and environment and is ideally suited for OEM use in programmable products. Product-specific routines are easily incorporated into the language, resulting in a programming environment tailored to the product's capabilities. OEM products, ranging from vision processing and graphics languages to data acquisition packages and special-purpose command line interpreters, demonstrate MAGIC/L's suitability for OEMs who supply sophisticated products.

MAGIC/L is available for a wide range of mini- and microcomputer systems. Although code can be written to take advantage of specific hardware or operating system characteristics, it can also be written to be highly machine independent, thus allowing easy ports from system to system.

A version of this product is available for VAX computers.

Price: \$295 – \$3000

Contact: David M. Jordan
(617) 576-0666

LOKI ENGINEERING, INC.

55 Wheeler Street

Cambridge, MA 02138

MARGOT: A MACRO-Based Generator of Command Language Interpreters

PDP-11 Operating System: RSX

Keywords: • Compilers • Interpreters • Language enhancers

Memory required: 400 words.

MARGOT consists of a set of metalanguage operators that can be used to describe the syntax and semantics of command languages. The operators are implemented as macros that expand to produce operation codes for a "MARGOT machine," which is implemented as an interpreter written in PDP-11 assembler language.

MARGOT is a powerful, problem-oriented, easy-to-learn language that corresponds naturally to BNF and allows a command's syntax and semantics to be associated easily. MARGOT includes facilities for definition of syntactic and semantic constructs, iteration, and specification of input and syntactic choice. The assembly-time and run-time actions of the MARGOT system are presented. DECUS number 11-322.

Restrictions: (1) MARGOT will not work for recursively defined languages. (2) MARGOT-generated interpreters can be called only from MACRO-11 programs.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

Micro Concurrent Pascal (mCP) Cross-Compiler

PDP-11 Operating System: RSX, RT-11

Keywords: • Compilers • Cross-compilers

• Language enhancers • Microprocessor development

This high-level language for programming real-time embedded systems implements Per Brinch Hansen's Concurrent Pascal, which supports processes and monitors. Programs compile into either pseudocode (P-code), which can be interpreted, or native assembly language code, used for most popular microprocessors. Programs can be compiled on a host computer and the outputted P-code interpreted or native code executed on the target microprocessor.

Designed for microcomputer use, the P-code is reentrant, relocatable, PROMable, and often more space-efficient than assembler. The mCP features include interrupt-handling capabilities with language constructs for writing device drivers, absolute hardware addressing, and assembly language routine calls. The mCP compiler resides on any

system supporting sequential Pascal, and the source code is available. The interpreter/kernel source is provided for the Z80, 8080/8085, 6809, 1802, Z8000, 8086/8088, LSI-11, and the 68000. Code generators are available for the 8086/8088, 68000, and Z8002. An mCP user's guide and mCP seminar are also available.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Thomas F. Loschiavo

(215) 362-0966

ENERTEC, INC.

19 Jenkins Avenue

Lansdale, PA 19446

microMAGIC Microprocessor Software Development Package

PDP-11 Operating System: RSX

Keywords: • Development tools • Microprocessor development
• Programming tools

This package allows users to develop and test software in a multiuser environment for a variety of 16-bit microprocessors, including DIGITAL's LSI-11s and FALCON, Intel's 8086 and 8088, and Motorola's 6809 and 68000. The application task is programmed in the block-structured, standard ALGOL-based high-level language RTL/2 and is compiled on the host minicomputer. The annotated assembler produced by the compilers is assembled and linked on the minicomputer, producing a loadable memory image. Application testing is carried out from the host computer through an RS232 link to the attached microprocessor. The test controller utility loads the user program into RAM on the microprocessor and controls target machine execution. Debugging commands include assembler-level breakpoint setting, single stepping, examination and alteration of registers and memory, and logging of the test session.

The package includes standard high-level language and real-time executive on target micro, providing multitasking, asynchronous and synchronous message passing, operator communication, and interrupt handling; linker-produced automatic ROM/RAM split; and compressed RAM image optionally produced for ROM insertion and automatic system startup. A macroprocessor, compiler, assembler, linker, and test controller are included. A real-time multitasking executive is provided for the target microprocessor.

A version of this product is available for VAX computers.

Price: \$7500 - \$15,000

Contact: Robert F. Swanson

(201) 865-6550

INTELLIGENT INDUSTRIAL SYSTEMS, INC.

300 Harmon Meadow Boulevard

Secaucus, NJ 07094

Micro/RSTS BASIC-PLUS-2**PDP-11 Operating System:** Micro/RSTS**Keywords:** • Application development • Compilers
• Language enhancers • Programming tools

This extended BASIC compiler takes full advantage of the PDP-11 floating point and integer instructions and generates threaded code instructions. Micro/RSTS BASIC-PLUS-2 provides a high-performance program execution environment for applications development and timesharing, combining immediate mode with the power of a structured programming language.

BASIC-PLUS-2 provides a BASIC programming support environment; compile-time directives; structured programming constructs; the EXTERNAL statement; language subsets and subset flaggers; a declining feature flagger for program maintenance/conversion use; exception handling (ON ERROR) for main and subprograms; multiline statements and multistatement lines; program segmentation; implicit or explicit data typing; symbolic names for control characters; definition of user-defined program constants through DECLARE CONSTANT; a BASIC symbolic debugger, allowing inspection and alteration of program variables; file organizations and access methods; dynamic record definition and variable allocation through MAP DYNAMIC; extended report formatting capabilities; arrays up to eight dimensions, declared at run time; matrix-manipulation capabilities; and compatibility with key RSTS/E BASIC-PLUS features.

Refer to SPD #18.09.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200**Contact:** Consult your local DIGITAL sales office (see Introduction).**Micro/RSTS COBOL-81****PDP-11 Operating System:** Micro/RSTS**Keywords:** • Compilers • Microprocessor development
• Programming tools

This high-level language for business data processing operates under the control of the Micro/RSTS operating system. Based on the 1974 ANSI COBOL Standard X3.23-1974, Micro/RSTS includes some of the features planned for the next COBOL standard. Micro/RSTS COBOL-81 is a subset of VAX COBOL and includes various DIGITAL extensions to COBOL, such as screen handling at the source language level, RMS-STX and RMS-STV special registers, and file sharing. This language consists of a compiler, an object-time system library, and an interactive symbolic debugger.

Micro/RSTS COBOL-81 is designed to meet the low-intermediate-level requirements of the U.S. government, as described in FIPS PUB21-1. Many of the individual modules also meet the high-level requirements.

Refer to SPD #18.08.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200

Contact: Consult your local DIGITAL sales office (see Introduction).

Micro/RSTS FORTRAN-77

PDP-11 Operating System: Micro/RSTS

Keywords: • Compilers • Diagnostics • Language enhancers
• Microprocessor development

This extended implementation of the ANSI subset FORTRAN-77 standard (X3.9-1978) runs on the Micro/RSTS operating system and contains all the features of the ANSI FORTRAN-77 subset, many of the full-set language features, and extensions that are not included in the ANSI FORTRAN-77 standard. Switch-selectable support is provided for user programs based on the previous ANSI FORTRAN standard (X3.9-1966).

Micro/RSTS FORTRAN-77 meets the Federal Information Processing Standard Publication (FIPS PUB-69) requirement for a flagger. The flagger optionally produces diagnostic messages for syntax and/or source form elements that do not conform to the full-level ANSI FORTRAN X3.9-1978 standard.

Micro/RSTS FORTRAN-77 programs can be optionally executed under control of Micro/RSTS FORTRAN-77 DEBUG (SPD 18.11.xx). Execution of application programs using Micro/RSTS FORTRAN-77 DEBUG aids in locating programming errors in successfully compiled programs that behave abnormally when executed.

The Micro/RSTS FORTRAN-77 compiler produces direct PDP-11 machine code optimized for execution-time efficiency on a MicroPDP-11 with a floating-point processor.

Refer to SPD #18.10.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200

Contact: Consult your local DIGITAL sales office (see Introduction).

Micro/RSX BASIC-PLUS-2

PDP-11 Operating System: Micro/RSX

Keywords: • Application development • Compilers
• Language enhancers • Programming tools

This extended BASIC compiler takes full advantage of the PDP-11 floating point and integer instructions and generates threaded code instructions. The product provides a high-performance program execution environment for applications development and timesharing, combining immediate mode with the power of a structured programming language.

In addition to elementary BASIC language features, Micro/R SX BASIC-PLUS-2 provides a BASIC programming support environment; compile-time directives; structured programming constructs; the EXTERNAL statement; language subsets and subset flaggers; exception handling (ON ERROR) for main and subprograms; multiline statements and multistatement lines; program segmentation; implicit or explicit data typing; symbolic names for control characters; definition of user-defined program constants through DECLARE CONSTANT; a BASIC symbolic debugger allowing inspection and alteration of program variables; file organizations and access methods; dynamic record definition and variable allocation using MAP DYNAMIC; extended report formatting capabilities; arrays of up to eight dimensions, declarable at run time; matrix-manipulation capabilities; and the full printable ASCII character set and 8-bit character codes within constants and I/O operations.

The object-time system is a set of object modules selectively linked with object modules produced by the Micro/R SX BASIC-PLUS-2 compiler by the operating system linker (task builder utility) to produce a task (program) ready for execution.

Micro/R SX operating system base kit is prerequisite.

Refer to SPD #18.06.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200 - \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

Micro/R SX COBOL-81

PDP-11 Operating System: Micro/R SX

Keywords: • Compilers • Debugging • Language enhancers
• Microprocessor development

This high-level language for business data processing is based on the 1974 ANSI COBOL Standard (X3.23-1974) and includes some of the features planned for the next COBOL standard. Micro/R SX COBOL-81 is a subset of VAX COBOL and includes various DIGITAL extensions to COBOL, including screen handling at the source language level.

Micro/R SX COBOL-81 consists of a compiler and an object-time system/library. The compiler produces an object module from a source program. The compiler can produce a source listing with embedded diagnostics indicating the line and position of a source code error, a data-name map, a procedure-name map, and a cross-reference listing in alphabetical order.

Refer to SPD #18.03.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200

Contact: Consult your local DIGITAL sales office (see Introduction).

Micro/RSX DIBOL**PDP-11 Operating System:** Micro/RSX**Keywords:** • Compilers • Debugging • Language enhancers
• Microprocessor development

This high-level procedural language for interactive business data processing is based on the DIBOL Standards Organization's DIBOL-83 definition of the language. Micro/RSX DIBOL is highly compatible with DIBOL-83 implementations on VAX/VMS, RSTS/E, CTS-300, Professional CTS-300, RSX-11M-PLUS, and P/OS. This language also provides Micro/RSX-specific extensions and an expansion path for applications requiring the advantages of Micro/RSX while retaining the capabilities and advantages of DIBOL-83.

Micro/RSX DIBOL provides efficient terminal handling and efficient access to the Micro/RSX Record Management Services (RMS). RMS provides sequential, relative, and multikey indexed record access.

The Micro/RSX DIBOL compiler reads a source program and produces an object module. The compiler can produce a source listing with embedded diagnostics.

The Micro/RSX DIBOL product includes a compiler, a run-time library, external subroutine libraries, the DIBOL Debugging Technique, and the ability to communicate between programs.

Refer to SPD #18.05.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200 - \$3000**Contact:** Consult your local DIGITAL sales office (see Introduction).**Micro/RSX FORTRAN-77****PDP-11 Operating System:** Micro/RSX**Keywords:** • Compilers • Diagnostics • Language enhancers
• Microprocessor development

This extended implementation of the ANSI subset FORTRAN-77 Standard (X3.9-1978) runs on the Micro/RSX operating system. Micro/RSX FORTRAN-77 contains all the features of the ANSI FORTRAN-77 subset, many of the full-set language features, and extensions that are not included in the ANSI FORTRAN-77 Standard. Switch-selectable support is provided for user programs, based on the previous ANSI FORTRAN Standard (X3.9-1966). Micro/RSX FORTRAN-77 includes all subset ANSI features, including CHARACTER data type and block IF construct, with IF...THEN, ELSE IF, ELSE and END IF statements, for conditional execution of blocks of statements.

Micro/RSX FORTRAN-77 meets the Federal Information Processing Standard Publication (FIPS PUB-69) requirement for a flagger. The flagger optionally produces diagnostic messages for syntax and source form elements that do not conform to the full-level ANSI FORTRAN (X3.9-1978) Standard.

910 Language Processors

The programs can be optionally executed under control of Micro/RXS FORTRAN-77 DEBUG (SPD 14.79.xx). Execution of application programs using PDP-11 FORTRAN-77 DEBUG aids in locating programming errors in successfully compiled programs that behave abnormally when executed.

Refer to SPD #18.04.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200

Contact: Consult your local DIGITAL sales office (see Introduction).

Micro/RXS PDP-11 Pascal

PDP-11 Operating System: Micro/RXS

Keywords: • Compilers • Language enhancers
• Microprocessor development

This implementation of the Pascal language accepts programs compatible with Level 0 of the ISO Specification for the Computer Programming Language Pascal (Draft International Standard 7185). Micro/RXS PDP-11 Pascal is a multipass optimizing compiler that provides all standard Pascal data types and statements, as well as extensions.

The Micro/RXS PDP-11 Pascal compiler performs optimizations designed to improve execution speed. Optional instruction to the compiler and input and output file attributes are specified by compiler switches that perform run-time checks of array bound, case selectors, pointers, string bounds, and subrange bounds; limit the number of error messages printed and allow compilation to continue regardless of the number of errors; cause code to be generated that provides source line numbers at run time; produce an optimal, machine-code listing; identify the Micro/RXS PDP-11 Pascal compiler version number; print warning-level messages that identify the use of Micro/RXS PDP-11 Pascal extensions; and provide automatic spooling of the listing file.

After completion, the RSX task builder is used to produce an executable image file and to provide support for both relocatable and resident object libraries.

Refer to SPD #18.07.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200

Contact: Consult your local DIGITAL sales office (see Introduction).

MINC BASIC

PDP-11 Operating System: None required

Keywords: • Graphics • Language enhancers
• Programming tools • Scientific

This conversational language developed at Dartmouth College uses simple English-like statements and familiar notations to perform programming operations. The MINC BASIC implementation for the

MINC system conforms to the American National Standards for minimal BASIC (ANSI X3.60-1978). MINC BASIC operates as a computational, graphics, and laboratory data-acquisition and control package for scientific and clinical applications and provides features for writing, editing, and running user programs. The screen text editor uses special function keys to make program editing easier.

The graphics calls in MINC BASIC plot two single-valued functions on the console CRT, with a resolution of 512 points on the X-axis and 190 points on the Y-axis. Other graphics features include automatic scaling, shading, and interpolation.

MINC BASIC includes commands for the control and monitoring of experiments through the standard IEEE-488 Interface or optional MINC plug-in modules for analog-to-digital conversion, analog preamplification and multiplexing, digital-to-analog conversion, digital input and output, timekeeping (crystal clock), and thermocouple temperature conversion. The commands display characters on the console CRT screen in reverse video, flashing, boldface, underline, and combination formats.

Refer to SPD #14.47.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$850 - \$1500

Contact: Consult your local DIGITAL sales office (see Introduction).

Mnemonic Dump

PDP-11 Operating System: RT-11

Keywords: • Language enhancers • Translators

Memory required: 8695 words.

This program inputs a machine code file, decodes the instructions, and outputs them in the form of assembly mnemonics. The purpose of the program is to allow a programmer to inspect an executable program in a form that is easier to read. DECUS number 11-394.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Modula-2/RSX

PDP-11 Operating System: RSX

Keywords: • Compilers • Microprocessor development
• Programming tools • Software utilities

Two Modula-2 compiler packages are available:

- The Modula-2/RSX Baseline System consists of a compiler, a linker, a debugger, and a system library of modules running under RSX-11M, RSX-11M-PLUS, Micro/RSX, or VAX/VMS in compatibility mode. This system allows the user to compile and link Modula-2 programs for execution under supervision of the Modula-2 run-time system task. In case of detected run-time errors,

a dump file can be generated, and the symbolic post-mortem debugger can be invoked to display the value of variables and the stack trace. Executable Modula-2 programs are loaded by entering the name of the program in response to the prompt of the Modula-2 system task.

- The Modula-2/RSX Toolkit can be used to link Modula-2 programs as an RSX task and to run them directly under RSX. The task can use the overlay system of RSX. The toolkit can call MACRO-11 assembler routines from Modula-2 programs — link assembler and Modula-2 components together, with certain restrictions. The toolkit can also link stand-alone programs and run them on a PDP-11 that has no RSX operating system and Modula-2 system task loaded. A simple coroutine scheduler and terminal driver is added.

Price: \$400 – \$1000

Contact: Henning H. Olesen
(+1) 15 70 07

BBC BROWN BOVERI & CO., LTD.

Ved Vesterport 6

Copenhagen DK-1612 V Denmark

MPS Cross-Assembly Programs for RT-11

PDP-11 Operating System: RT-11

Keywords: • Cross-assemblers • Language enhancers
• Microprocessor development • Modeling/simulation

Memory required: 16K.

This set of FORTRAN and MACRO programs allows the user to assemble and execute programs written for the 8008 microprocessor. The package includes an assembler, cross-reference program, simulator, and binary punch program. DECUS number 11-224.

Restrictions: The simulator can support programs up to 8K.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

MRMLIB

PDP-11 Operating System: RT-11

Keywords: • Language enhancers • Programming tools

This personal collection of subprograms can be called by FORTRAN programs and can also be written in FORTRAN. This reasonably portable set of subprograms carries out operations that would otherwise be continually rewritten; thus, many of the routines in this library perform simple (even trivial) tasks. This library also establishes a standard set of interfaces that are inherently more portable than the routines, as well as proven subprograms for nontrivial operations, particularly in the numerical area.

No guarantee as to the correctness or the efficiency of any routine can be given, but generally the routines warrant some confidence. DECUS number 11-207.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

MU BASIC-11/RT-11

PDP-11 Operating System: RT-11

Keywords: • Interpreters • Language enhancers
• Mathematics

BASIC, a conversational programming language developed at Dartmouth College, uses simple English-like statements and familiar mathematical notations to perform operations. MU BASIC-11/RT-11 is an interpreter operating under any RT-11 monitor with multiterminal capability (up to eight terminals).

Refer to SPD #12.20.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$590 – \$1320

Contact: Consult your local DIGITAL sales office (see Introduction).

Objective-C

PDP-11 Operating System: ULTRIX-11

Keywords: • Application development
• Microprocessor development • Programming tools
• Software utilities

This object-oriented language, based on C, is especially suitable for teams of professional C programmers building large, interactive performance-critical applications. A superset of C language, Objective-C is C, as well as the dynamically bound style of object-oriented programming defined in Smalltalk-80. Objective-C provides objects, messages, and classes, with full encapsulation and inheritance. The front end transforms the Objective-C statements into standard C statements that are compiled with any C compiler. This makes C a tool for building highly reusable units of modularity called Software-ICs — binary files that represent the classes of objects in an application.

The software comes with an initial library of C functions and Software-ICs that include the messaging, memory allocation, and debugging functions and the generic Software-ICs (Object, String, and several styles of Array). A separate library provides an assortment of additional Software-ICs: Collections (Set, Bag, Dictionary, Ordered Collection, and Stack), Geometry classes (Point and Rectangle), and an object-level mechanism called “automatic-I-O” for automatically moving objects to and from disks or across networks.

A version of this product is available for VAX computers.

Price: \$5000 – \$25,000

Contact: Chet Wisinski
(203) 426-1875

PRODUCTIVITY PRODUCTS INTERNATIONAL, INC.
27 Glen Road
Sandy Hook, CT 06482

ODT-11T

PDP-11 Operating System: RT-11

Keywords: • Debugging • Language enhancers

ODT-11T is an extension of RT-11 ODT (DEC-11-ORODA-D), adding three commands:

- N;T traces any section of code in which the user is interested, giving the instruction mnemonic, registers, and accumulators referenced.
- R;M monitors the contents of memory location R after each instruction is executed and does a breakpoint if it has been changed.
- N;V simulates an interrupt to the vector N for checkout of interrupt service routines.

DECUS number 11-221.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

PAL8XR (PDP-8/Intersil 6100 Cross-Assembler Under RT-11)

PDP-11 Operating System: RT-11

Keywords: • Assemblers • Cross-assemblers
• Language enhancers

Memory required: 4-5K words.

PAL8XR V02 is an assembler for a PDP-8 minicomputer or INTERSIL 6100 microprocessor and executes on a PDP-11 operating under RT-11. With the exceptions of the variations listed in the writeup, this assembler is compatible with the PAL III assembly language. The assembler is a revision of PAL-8, 11 (DECUS number 11-201) and is almost identical to that program, except for the substitution of new I/O routines conforming to RT-11 practices, the addition of page titling and numbering, and the addition of current date to the listing output. DECUS number 11-405.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Pascal-2™

PDP-11 Operating System: Micro/RSX, RSTS, RSX, RT-11

PRO Operating System: P/OS, RT-11, TSX-11

Keywords: • Compilers • Cross-compilers • Debugging
• Programming tools

Memory required: 32K.

This system development package, written in Pascal, consists of an optimizing Pascal compiler; an interactive, source-level debugger; a profiler that pinpoints execution bottlenecks; and other utilities to aid program development.

A version of this product is available for VAX computers.

Price: \$695 – \$7800

Contact: Mary Erichsen
(503) 245-2202

OREGON SOFTWARE
6915 S.W. Macadam Avenue
Portland, OR 97219

Pascal Compiler

PDP-11 Operating System: IAS, RSX

Keywords: • Compilers • Debugging • Language enhancers
• Source code control

Memory required: 32KW for RSX; 28K for RSTS.

This PDP-11 Pascal version, known as "Swedish Pascal," incorporates the latest corrections and enhancements developed by Seved Torstendahl (Version 6.2) and additional changes by Gerry Pelletier. This Pascal has a relatively high degree of conformance to the ISO Pascal standard; can optionally compile programs to use any arithmetic hardware; has such useful language extensions as default case, loop statement, variable-length string parameters, substring parameters, structured function results, and boundless array parameters; has enhanced I/O facilities for creating and handling files of various types and attributes; and uses standard files for terminal I/O (TTY). This Pascal features separate compilation of procedures/functions and linkage to external FORTRAN or MACRO routines. In addition to a source "include" facility, this Pascal includes development aids — statement trace, statement execution frequency, conditional compilation — full high-level interactive symbolic debugger and symbolic dump, and all source and tools for maintaining the compiler and runtime software. (The compiler can be compiled on a PDP-11.) DECUS number 11-346.

Restrictions: Packed data structures are implemented only for character arrays (always packed, two characters/word) and for Boolean arrays (packing optional, one Boolean/bit). The procedures pack and unpack have no effect. Only local gotos are allowed. A pair of procedures, mark and release, are used to allocate and deallocate dynamic storage.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

Pascal Native and Cross-Compilers

PDP-11 Operating System: Micro/R SX, RSTS, RSX, RT-11,
ULTRIX-11

PRO Operating System: Idris™, P/OS, RT-11

Keywords: • Compilers • Cross-compilers • Programming tools

Whitesmiths' Pascal compilers, highly portable across a wide range of operating systems and computers, have now been enhanced to full ISO (Level 1) with many popular extensions. By translating Pascal source

code to C, these Pascal compilers can operate in the numerous environments supported by Whitesmiths' C compiler or that offered with AT&T's UNIX* System V. Applications written in a portable fashion can be moved to a new system by recompiling and relinking, which permits development for many systems merely by purchasing a different compiler for each architecture. Pascal is translated into C code in one pass and then fed to a Whitesmiths or UNIX* compiler, thus gaining the benefits of an optimizing code generator and ensuring compatibility with C. Like the C compiler, files can be compiled separately and then linked to form an executable program.

Idris™ is a trademark of Whitesmiths, Ltd.

A version of this product is available for VAX computers.

Price: \$700 – \$2400

Contact: Susan Ferber

(617) 369-8499

WHITESMITHS, LTD.

97 Lowell Road

Concord, MA 01742

Pascal-xii

PDP-11 Operating System: RSTS, RSX, RT-11, ULTRIX-11

Keywords: • Compilers • Cross-compilers

• Language enhancers

This family of cross-compilers runs on DIGITAL PDP-11, LSI-11, and VAX/VMS hosts. Versions of Pascal-xii are available for the Z80 and 6809 targets only.

Pascal-xii is a true ISO level 0 Pascal with several important extensions, including the ability to link externally compiled modules and separately assembled assembly-language routines with main programs. Pascal-xii is a multipass compiler that produces as output a meta-assembly language source file called E-PAL (Enhanced Pascal Assembly Language). The E-PAL is further processed by the corresponding SUPERMAX cross-assembler in conjunction with a CYMRIC-supplied macro library, producing a relocatable object file.

The output of the cross-assembler is then linked with a run-time library also provided by CYMRIC as part of the Pascal-xii package. The resulting load module may be directly down-line loaded to hardware or used to produce ROMs.

Hard-copy documentation is provided with the packages, as well as a 1-year limited warranty.

A version of this product is available for VAX computers.

Price: \$1000

Contact: Mark P. White

(617) 938-0709

CYMRIC COMPUTER SYSTEMS, INC.

10 G. Roessler Road

Woburn, MA 01801

Pascal/RSX

PDP-11 Operating System: RSX

Keywords: • Compilers • Programming tools

This implementation of the Pascal language accepts programs compatible with Level 0 of the ISO Specification for the Computer Programming Language Pascal (Draft International Standard 7185). This multipass optimizing compiler provides all standard Pascal data types and statements, as well as extensions.

PDP-11 Pascal/RSX programs can be compiled in interactive mode or with an indirect command file. The PDP-11 Pascal/RSX compiler performs optimizations designed to improve execution speed, including constant folding, constant conversion, constant pooling, and global register assignment. Optional instruction to the compiler and input and output file attributes are specified by compiler switches that perform various functions. After compilation, the RSX Task Builder is used to produce an executable image file and to provide support for both relocatable and resident object libraries.

PDP-11 Pascal/RSX allows use of the FORTRAN standard calling sequence, permitting Pascal programs to communicate with FORTRAN-callable system routines for real-time applications. However, routines written in FORTRAN cannot be called from PDP-11 Pascal/RSX. In addition, PDP-11 Pascal/RSX programs can call RSX system services for process-control operations, system directives, and special peripheral access.

Refer to SPD #14.18.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the VAX computer.

Price: \$1200 – \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

PDL and PDL/81 (Program Design Language)

PDP-11 Operating System: RSX, ULTRIX-11

Keywords: • Programming tools • Systems communications

PDL is both a software design tool and an excellent medium for communication.

- As a software design tool, PDL encourages structured, efficient designs that result in code that is cleaner, easier to read, and generated in much less time than normal.

PDL is easy to use. Users need no formal training and very little practice. PDL provides a first-rate design methodology that designers want to use.

- As a medium for communication, PDL is a major contributor to successful project control. PDL provides complete and understandable documentation before programming begins. Since changes are easily incorporated, the program and the programmer are always kept up to date.

PDL is a complete replacement for flowcharts and is suitable for use with most software design methodologies.

A version of this product is available for VAX computers.

Price: £3300 – £4700

Contact: Graham Evans

44-(438) 316311

WARREN POINT INTERNATIONAL, LTD.

Babbage Road

Stevenage, Herts SG1 2EQ United Kingdom

PEP (Program Editor and Processor) Programming System

PDP-11 Operating System: RT-11

Keywords: • Compilers • Documentation tools • Interpreters
• Text management

PEP is an interpreter-based programming system based on an ALGOL-like language (described in DECUS Proceedings 1980, Amsterdam). PEP runs under the RT-11 SJ monitor.

The PEP language has structured statements (IF, WHILE, LOOP, FOR) and procedures with local variables and value and/or reference parameters. Available data types are integer (8-, 16-, 32-bit signed/unsigned), real, Boolean, character, and multidimensional arrays of those types.

A monitor program written in the PEP language allows line number-based editing of PEP programs and can execute PEP programs and directly typed PEP statements, as in BASIC. Facilities for adding procedures written in assembly language and for loading libraries of PEP and/or assembler procedures are included.

The package consists of documentation describing language and monitor commands; the PEP interpreter for FIS, FPU, or no F.P. hardware; a collection of PEP programs (cross-reference, simple compiler, monitor programs, random procedure, general least-squares procedure); and some sample assembly language programs. DECUS number 11-531.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

PL-11: High-Level Assembler Language

PDP-11 Operating System: RSX

Keywords: • Assemblers • Compilers • Programming tools

Memory required: 26K words.

This intermediate-level language, developed at the European Center for Nuclear Research (CERN) in Geneva, Switzerland, can replace

MACRO-11 in most applications. PL-11 follows the same principles as PL-360 for the IBM 360/370 computers. Since PL-11 is a low-level language, the programmer has nearly complete control over how the code is produced. However, PL-11 has high-level attributes, such as BEGIN-END blocks, PROCEDURES, IF and CASE statements, and FOR and WHILE loop constructs. PL-11 allows direct access to all memory locations and registers, except the PC. All addressing modes can be generated, especially in the declarations using synonyms. That avoids cluttering up the text of the program with addressing-mode information. The program layout is free-format, which if used properly, will encourage good programming style. The language has an INCLUDE feature to allow common source to be compiled together with the user's program. However, PL-11 does not have any conditional compilation or system-dependent features.

The compiler exists in a version written in PL-11 (except for an interface routine) running under RSX-11M. A version in FORTRAN runs on the DECsystem-10. Both versions are available from DECUS. A version also exists for the IBM 360/370, but that must be obtained from CERN. DECUS number 11-385.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Poor Man's Program Design Language for RSX-11/IAS

PDP-11 Operating System: IAS, RSX

Keywords: • Programming tools

Memory required: 18KW.

This program formats input module descriptions, produces a symbol table, and provides logic error checking and include files. Useful for documenting designs and putting them in writing, Program Design Language (PDL) is used by system and program designers to document the data structures, control logic, and module hierarchy by a system, subsystem, program, or subroutine.

The language is input with an editor and processed by a PDL program to find errors and to produce a well-formatted listing. The PDL is then incorporated into the source code as comments. DECUS number 11-668.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

PRM-11 (Pascal Record Management-11)

PDP-11 Operating System: RSTS, RSX

Keywords: • File management • Language enhancers
• Programming tools

Memory required: 1KW + RMS-11 + user code.

These routines are written in OMSI Pascal with in-line MACRO-11 code to interface to RMS-11. DIGITAL-supported high-level languages interface to RMS-11 by using keywords supported by the language compiler. The present versions of OMSI Pascal for the PDP-11 do not support RMS-11 interface. PRM-11 provides the interface by way of a set of external procedures similar to the keywords used by DIGITAL languages. The PRM-11 routines are called by the user code when RMS-11 operations are required and are linked to the user code during the task build. DECUS number 11-479.

Restrictions: These routines were developed on an RSX-11M system but can be used on RSTS/E. If the routines are used on RSTS, the command files for the library build cannot be used.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

PRO-IV Applications Processor

PDP-11 Operating System: Micro/RSTS, Micro/RSX, RSTS, RSX

PRO Operating System: P/OS

Keywords: • Application development • Development tools
• Programming tools

This transportable, fourth-generation language for developing, implementing, maintaining, and customizing applications uses the developer's input through a menu-driven, interactive, structured environment to create a linkage table that is the same across all operating systems and hardware configurations, therefore making developed applications vertically and horizontally transportable. PRO-IV automatically generates and maintains specification documentation, is CPU and disk efficient, uses existing files, uses 1-step prototyping-to-production to eliminate duplication of effort, and provides system security at all levels and encryption of data fields. File size is limited only by disk capacity.

A version of this product is available for VAX computers.

Price: \$2000 - \$40,000

Contact: Ken Matsagas
(714) 472-0250

PRO COMPUTER SCIENCES, INC.
23181 Verdugo Drive, Suite 103-A
Laguna Hills, CA 92653

PRO-IV Fourth Generation Language

PDP-11 Operating System: Micro/RSTS, Micro/RSX, RSTS, RSX,
RT-11

PRO Operating System: P/OS, XENIX™

Keywords: • Application development

This software package, developed by PRO-LABS, U.S.A., handles many of the technical procedures for the developer. PRO-IV requires fewer decisions by the developer, eliminates the need for written I/O

functions, simplifies field entries, and provides a highly structured process that reduces the opportunity for error (no compilation is needed).

PRO-IV is easier to understand and simpler to use than other elementary computer languages. Its flexibility and interactive features can be used to develop an application for any precise business need. Support for RMS files enables PRO-IV to access data bases from other run-time systems. PRO-IV is portable among DIGITAL's entire range of computers, except the 10/20.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$2000 – \$130,000

Contact: H. B. H. Reporter, Managing Director
021-355 3511 or Telex: 335797

FOURTH DIMENSION PRODUCTS LTD.

Fourth Dimension Building, 10 King Edwards Square
Sutton Coldfield, West Midlands B73 6AP United Kingdom

PRO/BASIC

PRO Operating System: P/OS

Keywords: • Application development • Compilers
• Programming tools

BASIC, a conversational programming language developed at Dartmouth College, uses simple English language-like statements and familiar mathematical notations to perform operations. This interactive BASIC for the Professional 300 system is comparable in function to most personal computer BASIC implementations yet maintains a high degree of compatibility with the BASIC available on DIGITAL's larger PDP-11 and VAX systems.

P/OS hard disk and P/OS diskette are prerequisite.

Refer to SPD #40.05.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$195

Contact: Consult your local DIGITAL sales office (see Introduction).

PRO/COBOL-Plus™

PRO Operating System: RT-11, TSX-11

Keywords: • Compilers • Language enhancers
• Programming tools

This high-performance, mainframe-level implementation of ANSI-74 COBOL executes large programs through an automatic segmentation feature that allows the execution of programs much larger than available memory. PRO/COBOL-Plus should be used to:

- Provide a high-performance execution environment for COBOL on the Professional 350 and 380
- Develop new programs for execution on the Professional, PDP-11, or other computer with an ANSI-74 COBOL implementation

922 Language Processors

- Transport existing ANSI-74 COBOL programs from another computer onto the Professional 350 or 380
- Convert batch COBOL programs into interactive COBOL programs on a Professional 350 or 380
- Debug or enhance, on a Professional, COBOL programs normally used on another computer with an ANSI-74 COBOL implementation

PRO/COBOL-Plus features highly productive development, unlimited program size, high-performance execution, self-maintaining ISAM, efficient multiuser support, and convenient, high-speed sorting. PRO/COBOL-Plus includes PRO/RTSORT™ — S & H's ultrafast disk sort — and will compile and run most Ryan McFarland COBOL programs.

Price: \$900

Contact: Gary Manookian
(615) 327-3670

S & H COMPUTER SYSTEMS, INC.

1027 17th Avenue South
Nashville, TN 37212

Professional Host Tool Kit

PDP-11 Operating System: RSX

Keywords: • Application development • Compilers
• Language enhancers • Programming tools

These programming tools and libraries allow development of applications for the Professional 300 computer systems. Programming languages available to the developer for building Professional-based applications are BASIC-PLUS-2, COBOL-81, DIBOL, FORTRAN-77, MACRO-11, and Pascal.

A host VAX/VMS, RSX-11M, or RSX-11M-PLUS system is used for application development. An editor provided with the host system is used to develop source files. MACRO-11 or a separately available Tool Kit language is used to assemble or compile the source program. The program is then linked against the libraries provided with the Tool Kit, and the frame builder is used to prepare the menu and help frames. The resultant files are then transferred to a Professional 350 or Professional 380 with hard disk for debugging.

Refer to SPD #30.28.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for VAX computers.

Price: \$800

Contact: Consult your local DIGITAL sales office (see Introduction).

Professional Host Tool Kit BASIC-PLUS-2**PDP-11 Operating System:** RSX**Keywords:** • Application development • Cross-compilers
• Debugging • Programming tools

This significantly extended BASIC compiler takes full advantage of the floating-point and integer instructions and generates threaded code. BASIC-PLUS-2 provides a high-performance program execution environment for applications development and timesharing.

An application is compiled on systems running RSX-11M, RSX-11M-PLUS, or VMS as part of the Professional Host Tool Kit and is subsequently linked and moved to the Professional 350 for debugging and execution.

Refer to SPD #30.27.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for VAX computers.

Price: \$1200**Contact:** Consult your local DIGITAL sales office (see Introduction).**Professional Host Tool Kit COBOL-81****PDP-11 Operating System:** RSX**Keywords:** • Compilers • Programming tools

This high-level language for business data processing generates programs for execution under control of the P/OS operating system. Based on the ANSI COBOL Standard (X3.23-1974) and including some of the features planned for the next COBOL standard, this COBOL-81 is compatible with COBOL-81/RSX, is a subset of VAX COBOL, and includes various DIGITAL extensions to COBOL, including screen handling at the source language level.

Refer to SPD #30.31.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for VAX computers.

Price: \$1200**Contact:** Consult your local DIGITAL sales office (see Introduction).**Professional Host Tool Kit DIBOL****PDP-11 Operating System:** RSX**Keywords:** • Application development • Compilers
• Language enhancers • Programming tools

This high-level procedural language for interactive business data processing allows development of DIBOL application programs for the Professional 300 series of computers on a VAX/VMS, RSX-11M, or RSX-11M-PLUS host system. The DIBOL program development process consists of compiling the DIBOL source program using the DIBOL-83 compiler, linking the object programs with external sub-routines and library modules, and developing any required help or menu frames with the Frame Development Tool on the host system.

The application and any frame files can then be transferred to the Professional system over a standard terminal interface line and executed and debugged on a Professional Series computer.

Professional Host Tool Kit DIBOL is based on the DIBOL Standards Organization's DIBOL-83 definition of the language. Professional Host Tool Kit DIBOL is highly compatible with DIBOL-83 implementations on other operating systems, including RSTS/E, RSX-11M-PLUS, CTS-300, and VAX/VMS, as well as PRO/Tool Kit DIBOL, which allows applications to be developed on the Professional 350 computer with hard disk. The language also provides Professional Series 300-specific extensions while retaining the capabilities and advantages of DIBOL-83.

Refer to SPD #30.26.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for VAX computers.

Price: \$900 - \$1200

Contact: Consult your local DIGITAL sales office (see Introduction).

Professional Host Tool Kit FORTRAN-77

PDP-11 Operating System: RSX

Keywords: • Application development • Compilers
• Debugging • Programming tools

This extended implementation of the ANSI subset FORTRAN-77 Standard (X3.9-1978) runs on the Professional 300 Series Applications Development System and contains the features of the ANSI FORTRAN-77 subset, many of the full-set language features, and extensions that are not included in the ANSI FORTRAN-77 Standard. Switch-selectable support is provided for user programs, based on the previous ANSI FORTRAN Standard (X3.9-1966).

Professional Host Tool Kit FORTRAN-77 meets the FIPS PUB-69 requirement for a flagger. The flagger optionally produces diagnostic messages for syntax or source form elements that do not conform to the full-level ANSI FORTRAN Standard (X3.9-1978).

An application is compiled on systems running RSX-11M, RSX-11M-PLUS, or VAX/VMS, as part of the Professional Host Tool Kit, and is subsequently linked and moved to the Professional 350 with hard disk for debugging and execution.

Refer to SPD #30.38.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for VAX computers.

Price: \$780 - \$1200

Contact: Consult your local DIGITAL sales office (see Introduction).

Professional Host Tool Kit FORTRAN-77 DEBUG**PDP-11 Operating System:** RSX**Keywords:** • Debugging • Diagnostics • Programming tools

This fully symbolic debugger for FORTRAN-77 and MACRO-11 runs on the Professional 300 Series Applications Development System and helps users locate programming errors in successfully compiled programs that do not execute properly. Professional Host Tool Kit FORTRAN-77 DEBUG runs as a 2-task debugger. A small portion of the code, necessary to debug applications, is linked with the user task. The major portion of the debugger runs as a separate task. The debugger provides access to program symbols by reading the symbol table file produced by the task builder on the host operating system and can understand symbols produced by Professional Host Tool Kit FORTRAN-77 and MACRO-11.

Refer to SPD #30.42.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

Professional Host Tool Kit Pascal**PDP-11 Operating System:** RSX**Keywords:** • Application development • Compilers
• Language enhancers • Programming tools

This extended implementation of the Pascal language helps the application programmer to access the P/OS system capabilities and simplifies application design. VAX Pascal is compatible with the ISO and ANSI Pascal standards.

Professional Host Tool Kit Pascal is a true optimizing compiler. The software, which runs on a host VAX/VMS, RSX-11M, or RSX-11M-PLUS system, generates PDP-11 instructions for eventual execution on a target Professional 300 Series system. The compiler runs in the Tool Kit environment. The generated code has full access to the graphics library, menu services, and communications services.

Refer to SPD #30.30.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for VAX computers.

Price: \$780 - \$1200

Contact: Consult your local DIGITAL sales office (see Introduction).

PRO/Tool Kit BASIC-PLUS-2**PRO Operating System:** P/OS**Keywords:** • Application development • Compilers
• Language enhancers • Programming tools

This significantly extended BASIC compiler runs on the Professional 300 series of personal computers, taking full advantage of the floating

point and integer instructions and generating threaded code instructions. BASIC-PLUS-2 provides a high-performance program execution environment for applications development.

In addition to elementary BASIC language features, BASIC-PLUS-2 provides a BASIC programming support environment, compile-time directives, structured programming constructs, language subsets and subset flaggers, exception handling (ON ERROR) for main and subprograms, multiline statements and multistatement lines, program segmentation, implicit or explicit data typing, and symbolic names for control characters; definition of user-defined program constants through DECLARE CONSTANT; a BASIC Symbolic Debugger, allowing inspection and alteration of program variables; file organizations and access methods; dynamic record definition and variable allocation by means of MAP DYNAMIC; extended report formatting capabilities; arrays up to eight dimensions, declarable at run time; and matrix-manipulation capabilities. BASIC-PLUS-2 allows use of the full printable ASCII character set and allows use of the DIGITAL Multinational Character Set within constants and I/O operations.

PRO/Tool Kit is prerequisite.

Refer to SPD #40.23.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

PRO/Tool Kit COBOL-81

PRO Operating System: P/OS

Keywords: • Compilers • Language enhancers
• Programming tools

This high-level language for business data processing is based on the 1974 ANSI COBOL Standard X3.23-1974 and includes some of the features planned for the next COBOL standard. This COBOL-81 is compatible with COBOL-81/RSX, is a subset of VAX COBOL, and includes various DIGITAL extensions to COBOL, including screen handling at the source language level.

The product meets the low-intermediate-level requirements of the U.S. government, as described in FIPS PUB21-1.

PRO/Tool Kit is prerequisite.

Refer to SPD #40.24.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

PRO/Tool Kit DIBOL

PRO Operating System: P/OS

Keywords: • Compilers • Programming tools

This high-level procedural language, designed specifically for interactive business data processing, runs on the Professional 350 computer as an optional software component to the PRO/Tool Kit. This language, based on the DIBOL Standards Organization's DIBOL-83 definition of the language, is highly compatible with DIBOL-83 implementations on other operating systems, including RSTS/E, RSX-11M-PLUS, CTS-300, and VAX/VMS, as well as Professional Host Tool Kit DIBOL, which allows applications to be developed for the Professional 300 computers on VAX, RSX-11M, and RSX-11M-PLUS systems. PRO/Tool Kit DIBOL also provides Professional 300 series-specific extensions while retaining the capabilities and advantages of DIBOL-83.

The DIBOL program-development process consists of compiling the DIBOL source program, using the DIBOL-83 compiler; linking the object programs with external subroutines and library modules; and developing any required help or menu frames with the Frame Development Tool on the Professional 350. The application can then be executed and debugged on a Professional 350 with hard disk.

PRO/Tool Kit DIBOL includes a compiler, external subroutine libraries, and the DIBOL Debugging Technique. The run-time library, which is required to execute programs written in DIBOL on the Professional, and the run-time error message file are distributed as part of the P/OS operating system.

PRO/Tool Kit is prerequisite.

Refer to SPD #40.22.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$495

Contact: Consult your local DIGITAL sales office (see Introduction).

PRO/Tool Kit FORTRAN-77

PRO Operating System: P/OS

Keywords: • Compilers • Development tools • Menu handlers
• Programming tools

This extended implementation of the ANSI subset FORTRAN-77 standard (X3.9-1978) runs on the Professional 300 series of computer systems. The software contains the features of the ANSI FORTRAN-77 subset, many of the full-set language features, and extensions that are not included in the ANSI FORTRAN-77 standard. Switch-selectable support is provided for user programs based on the previous ANSI FORTRAN standard (X3.9-1966).

The kit meets the Federal Information Processing Standard Publication (FIPS PUB-69) requirement for a flagger. The flagger optionally produces diagnostic messages for syntax and source form elements that do not conform to the full-level ANSI FORTRAN X3.9-1978 standard.

An application is compiled on a Professional 350 running the PRO/Tool Kit. Subsequent linking is against the libraries provided with

PRO/Tool Kit FORTRAN-77. The Frame Development Tool is used to prepare the menu and help frames. The application can then be executed and debugged on the Professional 350. Programs can be optionally executed under control of PRO/Tool Kit FORTRAN-77 DEBUG.

PRO/Tool Kit FORTRAN-77 includes all subset ANSI features, including CHARACTER data type and block IF construct, including IF...THEN, ELSE IF, ELSE, and END IF statements, for conditional execution of blocks of statements.

PRO/Tool Kit is prerequisite.

Refer to SPD #40.21.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$495

Contact: Consult your local DIGITAL sales office (see Introduction).

PRO/Tool Kit Pascal

PRO Operating System: P/OS

Keywords: • Application development • Compilers
• Language enhancers

Pascal is a structured, high-level programming language that provides a modular, systematic approach to computerized problem solving. This extended implementation of the Pascal language for use on a Professional 350 system assists the applications programmer in accessing the P/OS system capabilities and simplifies application design. In addition, a high degree of compatibility exists with VAX Pascal and the ISO and ANSI Pascal standards.

The kit is a true optimizing compiler, generating PDP-11 instructions for eventual execution on a Professional 300 system. The generated code has full access to the graphics library, menu services, and communications services.

PRO/Tool Kit is prerequisite.

Refer to SPD #40.20.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$495

Contact: Consult your local DIGITAL sales office (see Introduction).

RASM (Reverse Assemblies for RT-11)

PDP-11 Operating System: RT-11

Keywords: • Assemblers • Data conversion
• Language enhancers

This program converts each instruction of any RT-11 disk file into instruction mnemonic form with octal word and optional byte, ASCII, and RAD50 equivalents. The user may specify several switch options in the standard RT-11 command string format to obtain a reverse assembly listing of any block or consecutive blocks of a particular file. RASM can also be used as an extended file dump utility and runs on all

RT-11 configurations, including the smallest. DECUS number 11-335.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RATFOR: Structured FORTRAN Preprocessor

PDP-11 Operating System: IAS, RSX

Keywords: • Debugging • Language enhancers
• Pre- and postprocessors

Memory required: 30K.

RATFOR improves many of the "cosmetic" and flow-control inadequacies of standard FORTRAN. RATFOR converts the following statements to FORTRAN: DO; FOR; IF; IF ELSE; ELSE; REPEAT UNTIL; WHILE; BREAK; and NEXT. Also supported are INCLUDE files, the ability to DEFINE symbolic constants, multiargument macros, conditional processing of sections of code (IFDEF, IFNOTDEF, ENDIFDEF), nine levels of DEBUG lines, and character strings. Standard DIGITAL command line syntax with nine switches make RATFOR very easy to use. DECUS number 11-386.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

ReadCOBOL™

PDP-11 Operating System: CTS-300, DSM (DSM-11), IAS, RSTS, RSX, RT-11, ULTRIX-11

Keywords: • Data dictionary • Language enhancers
• Pre- and postprocessors

This COBOL preprocessor refurbishes your COBOL source programs, automatically structuring and formatting COBOL statements while sequencing paragraph and section names. ReadCOBOL semiautomatically renames data and paragraph items, as specified by a programmer or data administrator. ReadCOBOL features a simplified data dictionary with printed directories; COBOL statement formatting and alignment customized to your installation's standards; automatic, optional paragraph name and section name sequencing; an interactive on-screen presentation of each data and paragraph name for a 1-time replacement with a more descriptive or standardized name; and automatic, optional-level number standardization.

The Foundation promises to users of ReadCOBOL these benefits: a new level of formatting standardization for all your COBOL code — achieved automatically; a new level of readability and maintainability for your COBOL programs, regardless of who wrote them or how many times they have been changed; the elimination of the time and drudgery spent by your programmers in following shop standards in their

coding — all formatting and paragraph sequencing can be done automatically; and the ability to automatically bring all your COBOL programs up to standard whenever your standards are updated. About one programmer hour is required to learn ReadCOBOL.

The permanent license for ReadCOBOL includes the source code. User references are available on request.

A version of this product is available for VAX computers.

Price: \$11,250

Contact: J. Dwight Minkler II, Executive Director
(602) 955-1148

FOUNDATION FOR SOFTWARE ENGINEERING
4339 North 39th Street
Phoenix, AZ 85018

Reese BASIC

PDP-11 Operating System: IAS, RSX

Keywords: • Debugging • Games • Interpreters
• Programming tools

This program includes full Files-11 I/O support, including fixed-length random access and shared mode; flexible string functions and user-defined functions; and multiuser implementation supported with separate pure and impure areas from IAS and RSX-11D only.

Since Reese BASIC is an interpreter, it includes the special debugging commands, such as STEP, CON, and SET TRACE. Significant manipulation of the source program is done to speed up operation. OVERLAY and a data-preserving CHAIN are also supported. A clean "break" feature is implemented through the TT handler. Features similar to those in BASIC-PLUS-2 have been added, including virtual arrays, integer and byte variables, continued lines, and IF-THEN-ELSE. User-written machine language subroutines are supported, as is the capability of SPAWNING another task.

Also included on the tape are two programs: MURPHY, which randomly produces versions of Murphy's law; and MAY, which gives curses of the form "May the bird of happiness...."

No guarantees are made as to the completeness, usability, or quality of the programs on the tape, and the material has not been checked or reviewed. DECUS number 11-SP-72.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RPG II

PDP-11 Operating System: RSTS, RSX

Keywords: • Compilers • Data conversion

This programming language for business data processing operations involving data file manipulation and report generation runs on RSTS/E, RSX-11M, and RSX-11M-PLUS operating systems. User

application programs are developed with defined specifications that indicate file description, input, output, calculation, and control parameters. The PDP-11 RPG II compiler translates a set of program specifications into machine language instructions. Those instructions are linked with PDP-11 RPG II object-time library routines and executed on the appropriate PDP-11 operating system. A set of utility programs is provided to help users convert existing RPG II programs and related data files, previously developed on non-DIGITAL systems, to the form required by PDP-11 RPG II.

An RPG II program is defined by the user specification of the exact, detailed description of input data, output formats, and desired processing steps.

Refer to SPD #13.21.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

RSTS Libraries for Swedish Pascal

PDP-11 Operating System: RSTS

Keywords: • Language enhancers • Programming tools
• Software utilities

SWELC.OLB is a library of 44 Swedish Pascal (DECUS number 11-346) external procedures giving Pascal programs access to many RSTS/E operating system facilities. Those facilities include magtape functions, RSTS native block I/O, wildcard lookup, date and time, job information, messages, detach, chain, logout, priority broadcast, sleep, assign, and RAD50. DECUS number is 11-602.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RSTS MACRO Odds and Ends

PDP-11 Operating System: RSTS

Keywords: • File management • Programming tools
• Software utilities

The MACRO-11 subroutines on this tape may be useful to the RSTS MACRO programmer. Other useful programs, including the current release of TIDY, are offered. TIDY is an operator/user account maintenance program enabling the user to step through an account, looking at each file in the UF and providing various options on each file — for example, Copy, Delete, Rename, List, and so on. Also on the tape is a crude but effective mailbox system.

Some documentation is included on the RSTS system directives (EMT.DOC). DECUS number 11-635.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RSTS/E DIBOL**PDP-11 Operating System:** RSTS**Keywords:** • Compilers • Debugging

This high-level procedural language for interactive business data processing runs under the RSTS/E operating system, taking advantage of the system facilities. RSTS/E DIBOL is based on the DIBOL Standards Organization's DIBOL-83 definition of the language and is compatible with DIBOL-83 implementations on VAX/VMS, CTS-300, RSX-11M-PLUS, Micro/RSX, and P/OS.

DIBOL provides efficient terminal handling and efficient access to the Record Management Services (RMS); RMS provides sequential record access, relative record access, and multikey indexed sequential record access. RSTS/E DIBOL provides an alternative to RMS, called DMS. DMS provides sequential, relative, and single-key indexed sequential record access.

DIBOL-83 supports a set of language statements commonly referred to as structured constructs. Those statements are designed to complement and facilitate desirable programming practices.

The DIBOL compiler reads a source program and produces an object module. The compiler can produce a source listing with embedded diagnostics.

The RSTS/E DIBOL product includes a compiler, a run-time library, external subroutine libraries, the DIBOL Debugging Technique, a message manager for communicating between programs, a program to monitor the activities of the message manager, a SORT for DMS and RMS files, and DECFORM.

Refer to SPD #14.08.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200 - \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

RSX-11 BASIC**PDP-11 Operating System:** RSX

Keywords: • Calculation aids • Interpreters
• Language enhancers • Programming tools

Memory required: 6K words.

This adaptation of DIGITAL's PDP-11 4K stand-alone BASIC is useful as a desk calculator or for calculations requiring only small amounts of input data. The SAVE and OLD commands can use any RSX-11 device for program storage. The program has no provisions for programmed I/O to any device except the user's terminal. The best documentation for this system is DIGITAL's *PDP-11 BASIC Programming Manual*. Documentation and command files are provided with the source files. DECUS number 11-269.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RSX-11 FOCAL**PDP-11 Operating System:** IAS, RSX**Keywords:** • Engineering • Interpreters
• Language enhancers • Scientific

This interpreter for the FOCAL language runs as a multiuser task under the RSX-11D, RSX-11M, and IAS systems. Numerous language extensions include octal radix support, full library facilities — support of I/O up to eight binary files, including random-access files permitting virtual arrays, and vectors. Vectors and integer arrays allocated continuously can be addressed as integers or as bytes, and full string support is provided by new FOCAL language statements and functions. Moving substrings, conversion of number to ASCII string or back, string comparisons, and substring location are included.

Support for hardware control is extensive. FOCAL can handle up to 8 clock-scheduling alarms and up to 15 interrupts (using supervisor space), execute any RSX EMT call, and control the system console (TI:) without the usual implied wait of ASK. Twenty-seven nonerasable variables are provided for communication with overlays, and provision is made for variables in global commons, if desired. Diagnostics are in English. Full trigonometric functions include arctangent, sine, and cosine. Log and exponential are also available, as well as square root. Programs can be renumbered, data strings can be executed as FOCAL commands, and a modified IF calls groups through DO rather than GOTO. FOR loops can be broken. Extensive conditional assemblies allow a user to select as many of those features as desired. The pure segment of FOCAL is about 4.5K; impure sections can be about 1.5K and up, depending on allocated program space. Documentation shows how to add user functions. DECUS number 11-284.

Restrictions: The symbol table dump occasionally gets confused if vectors allocated start other than a 4-word boundary but is harmless to program execution. Hardware floating point is very crude and slow.

Associated documentation: *FOCAL-11 User's Manual* (DEC-11-LFOCA-F-D).

Note: RSX-11 FOCAL is also included on DECUS number 11-SP-3 magtape.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RSX-11M-PLUS DIBOL**PDP-11 Operating System:** RSX**Keywords:** • Compilers • Language enhancers

This high-level procedural language for interactive business data processing runs under the RSX-11M-PLUS operating system, taking advantage of the system facilities. RSX-11M-PLUS DIBOL is based on the DIBOL Standards Organization's DIBOL-83 definition of the language and is highly compatible with DIBOL-83 implementations

on other operating systems, including VMS, RSTS/E, CTS-300 and Professional CTS-300, Micro/RSX, and P/OS. RSX-11M-PLUS DIBOL also provides RSX-11M-PLUS-specific extensions and an expansion path for applications requiring the power of RSX-11M-PLUS while retaining the capabilities and advantages of DIBOL-83.

DIBOL provides efficient terminal handling and efficient access to the RSX-11M-PLUS Record Management Services (RMS); RMS provides sequential record access, relative record access, and multikey indexed sequential record access. DIBOL-83 supports a set of language statements commonly referred to as structured constructs. Those new statements are designed to complement and facilitate desirable programming practices.

The DIBOL compiler reads a source program and produces an object module. The compiler can produce a source listing with embedded diagnostics.

The RSX-11M-PLUS DIBOL product includes a compiler, a run-time library, external subroutine libraries, the DIBOL Debugging Technique, and the ability to communicate between programs.

Refer to SPD #14.24.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200 - \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

RT11/03 FORTRAN Extensions

PDP-11 Operating System: RT-11

Keywords: • A/D, D/A • Data collection • Language enhancers
• Software utilities

The Real-Time 11/03 FORTRAN Extensions consist of a library (LSILIB) of laboratory subroutines supporting the ADV11-A, KWV11-A, AAV11-A, and DRV11. The laboratory subroutine library provides the capability of acquiring data in modes provided by the LSI laboratory hardware. The subroutine library also provides the capability to operate CTR display through the digital-to-analog converters included in the system package.

A completion routine capability allows the user to write FORTRAN subroutines that are activated asynchronously upon completion of I/O activity such as the filling of a data buffer. DRV11 support allows up to eight of those interfaces to be operated simultaneously. The library is easily configured for the devices on the user's configuration. DECUS number 11-446.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RTL/2 (Real-Time Language)**PDP-11 Operating System:** RSX**Keywords:** • Assemblers • Compilers • Programming tools
• Source code control

This high-level, structured, ALGOL-based Pascal-like language is designed for use in real-time computing and is especially suited for the programming of on-line data collection, real-time monitoring, and control. RTL/2 is strongly typed and supports modularity, reentrancy, recursion, multitasking, and assembly language code inserts. RTL/2 is used worldwide at more than 500 installations. The language is British Standard BS5904. The system has no subsets or supersets to affect transportability between different vendor computers. A source code-level Symbolic Debug Package comes with the compiler.

A version of this product is available for VAX computers.

Price: \$3000**Contact:** Robert F. Swanson
(201) 865-6550

INTELLIGENT INDUSTRIAL SYSTEMS, INC.
300 Harmon Meadow Boulevard
Secaucus, NJ 07094

The Safe C Runtime Analyzer™**PDP-11 Operating System:** RSTS, RSX, RT-11, ULTRIX-11**Keywords:** • Compilers • Cross-compilers • Debugging

The Safe C Runtime Analyzer (RA) is a checkout compiler for the C language. The language understood by the Safe C Runtime Analyzer is identical to that understood by the standard C compilers.

The RA differs from ordinary compilers in the run-time checking, tracing, and profiling it provides for C programs. Code generated by the Safe C Runtime Analyzer checks for:

- Misuse of functions: RA detects mismatched formal and actual parameters and checks the types and number of parameters.
- Array indexing out of bounds: RA checks for errant array indexes, including indexes in parameter arrays and in the argument list to main.
- Stray pointers: RA checks for data pointers that point outside of a program's data area and for function pointers that point outside the text area.
- Arithmetic errors: RA checks for arithmetic overflow and division by 0.
- Misuse of standard I/O: RA checks the validity, types, and number of arguments to routines in the standard I/O library. In addition, RA compares the control string in calls to the formatted input and output routines to the actual arguments passed and checks arguments for valid values.
- Misuse of string functions: RA checks the types and values of arguments to the copy, catenate, and length functions for strings.

In addition, the Safe C Runtime Analyzer can produce code to generate a dynamic trace of function calls with their arguments and return values. In the trace, arguments and return values are labeled and printed in a format suitable to their type.

Each of the run-time checks and tracings can be applied selectively for each source file and can be controlled at run time from within the program. Code generated by the Safe C Runtime Analyzer can be freely linked with object modules generated by other compilers and assemblers.

A version of this product is available for VAX computers.

Price: \$1000 - \$5000

Contact: James R. Norgaard
(617) 497-2160

CATALYTIX CORP.

55 Wheeler Street

Cambridge, MA 02138

Safe C™ Interpreter

PDP-11 Operating System: ULTRIX-11

Keywords: • Debugging • Interpreters • Language enhancers
• Programming tools

Memory required: 128K.

This easy-to-use interpreter, written in C, provides interactive execution of C programs, which can be executed under fine control of the programmer. Parts of the program can be modified and immediately reflected in the program's execution.

Once the modules are loaded into the interpreter, any function can be executed interactively, including the program entry point, using standard command-line syntax. During execution, the program can be monitored by setting breakpoints into the source code so that they can depend on any collection of conditions; by tracing program execution at every expression, statement, or function call; by examining and changing the values of any active variables, using C syntax; by invoking extensive run-time checking similar to that of the Safe C compiler; and by invoking arbitrary code after the execution of each expression or statement, such as code to check or display the values of particular variables.

The Safe C Interpreter speeds program development, eliminates compiling and linking from the development cycle (you just edit and run), makes debugging easy, and has all the power of the best source-level debuggers without the clumsiness of their operation.

A version of this product is available for VAX computers.

Price: \$600 - \$6000

Contact: James R. Norgaard
(617) 497-2160

CATALYTIX CORP.
55 Wheeler Street
Cambridge, MA 02138

SAL-11 (Structured Assembly Language)

PDP-11 Operating System: RSX, RT-11

Keywords: • Language enhancers • Programming tools
• Software utilities

SAL-11 controls program development and maintenance costs by increasing the productivity of the application and systems programmer. Operating as a MACRO-11 preprocessor, SAL-11 uses structured programming techniques that allow a programming staff to design assembly language programs more quickly and easily by breaking complex tasks into smaller, more manageable portions. SAL-11 eliminates repetitive coding, reduces logic errors, and creates more readable and maintainable software without sacrificing the efficiency and flexibility of assembly coding.

Price: \$1295 - \$1595

Contact: Sales Department
(301) 864-3700

GEJAC, INC.
P.O. Box 188
Riverdale, MD 20737

SAL Low-Cost Cross-Assemblers

PDP-11 Operating System: RSX, RT-11

Keywords: • Cross-assemblers • Development tools

This series of cross-assemblers runs under RSX-11M (V3.1 or later) and RT-11 (V3 or later). The source and object files are in the manufacturer's standard format, and alternative object code formats are available for the Tektronix 8001 development laboratory and PROM programmers. The cross-assemblers are written in PDP-11 assembly language for optimum speed, between 1000 and 3000 lines/minute (1500 to 4500 lines/minute, including comments), and for optimum use of system interface facilities. The command line structure is similar to that of any DIGITAL system utility familiar to users.

Supported devices include Intel 8080/8085, 8048 (8041, 8021, and 8022 optional extras), and 8051; Motorola 6800/01/03/08, 6805, and 6809; RCA 1802/04/05/06; Zilog Z80; National NSC800; National Semiconductor SC/MP; Mostek 6502; Texas 9900/99000 and 7000; and Hitachi 68403 and 6300.

A version of this product is available for VAX computers.

Price: £500 - £750

Contact: Eric Goodyer
(01) 467-2636

SIRA LTD.
South Hill
Chislehurst, Kent BR7 5EH England

Series IV System

PDP-11 Operating System: RSX

Keywords: • Data base management • Data entry
• Networking • Programming tools

This application implementation system offers 80% to 90% reduction in development and maintenance over conventional high-level languages. The system is designed for local and remote development and implementation of screen-oriented applications, interactive and batch processing, multiprogramming, and networking. Up to 32 terminals can be used on the same or mixed applications simultaneously. The system permits dynamic attach/detach of terminals. The system provides development for multiterminal and multiscreen use that can be performed on a single terminal and multiterminals called automatically at run time. The system features uses from data entry validation and display to transaction processing, including dynamic files update of its own files, other files, or data base systems. A translation feature for any language use — German, French, Japanese, Arabic, and so on — is available. Security features are also provided. Various terminals and video options are available.

A version of this product is available for VAX computers.

Price: \$8000 — \$22,000

Contact: J. Milton, President
022 61 78 21 or 022 61 78 22
SOSY S. A.
5, rue Cesar-Soulie
1260 Nyon
Geneva Switzerland

SIBOL (Software Ireland Business-Oriented Language)

PDP-11 Operating System: XENIX™

Keywords: • Compilers • Debugging • Interpreters
• Software utilities

SIBOL is a commercial DIBOL-compatible programming language for the UNIX* operating system. Written in C, SIBOL comprises a compiler, a run-time interpreter, a symbolic debugger, and a library of external utility subroutines. SIBOL can be used as a free-standing language or to convert existing DIBOL programs.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: F. S. Graham
(44) 232-247433

SOFTWARE IRELAND LTD.
26 Linenhall Street
Belfast BT2 8PJ Northern Ireland

SOFTBOL

PDP-11 Operating System: CTS-300

Keywords: • Compilers • Cross-compilers

This DIBOL-83-compatible compiler and run-time system allows CTS-300 DIBOL software to be run under VMS. CTS-300-compatible utilities, such as ISAM and SORT, are included to cross-compile to CP/M-86,[®] MS[™]-DOS, P/OS, PC-DOS, RSX, XENIX,[™] and UNIX* environments. Because the file structure is identical to CTS-300 installations, no file conversion is necessary. The performance of all software run under SOFTBOL is comparable to that of DIBOL under VMS.

CP/M-86[®] is a registered trademark of Digital Research, Inc. MS[™]-DOS and XENIX[™] are trademarks of Microsoft Corp. * UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Glenn Eastman
(617) 851-6245

OMTOOL CORP.

1445 Main Street, Suite 26, P.O. Box 477
Tewksbury, MA 01876

SPAL-11 (Structured Programming Using Assembly Language)

PDP-11 Operating System: RSX, RT-11

Keywords: • Programming tools • Software utilities

SPAL-11 is a set of macros that, when incorporated in your default macro library, enables you to write well-constructed, clear, and maintainable programs. The program is used in several countries. SPAL-11 makes sophisticated use of the MACRO-11 assembler; where possible, the code generated has been optimized. DECUS number 11-606.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

SpeedCOBOL[™]

PDP-11 Operating System: CTS-300, DSM (DSM-11), IAS, RSTS,
RSX, RT-11, ULTRIX-11

Keywords: • Data dictionary • Language enhancers
• Pre- and postprocessors

This COBOL preprocessor expands abbreviations into COBOL reserved words and phrases, data names and paragraph names, condition names, file names, and any other string you wish to abbreviate.

SpeedCOBOL features a simplified data dictionary with printed directories, both shop- and programmer-defined abbreviations, a parallel listing showing the abbreviated code alongside the expanded full COBOL code, and a statistics page documenting the savings in coding time for each program.

The Foundation promises to users of SpeedCOBOL these benefits: 40% to 50% savings in COBOL coding time, more descriptive data names and paragraph names used in programs coded using SpeedCOBOL, and the reduction or elimination of COBOL coding and keying drudgery. A self-learning procedure for SpeedCOBOL requires about one programmer hour.

The permanent license for SpeedCOBOL includes the source code. User references are available on request.

A version of this product is available for VAX computers.

Price: \$3750

Contact: J. Dwight Minkler II, Executive Director
(602) 955-1148

FOUNDATION FOR SOFTWARE ENGINEERING
4339 North 39th Street
Phoenix, AZ 85018

Stage 2/RSX

PDP-11 Operating System: RSX

Keywords: • Pre- and postprocessors

This general-purpose macro processor is described in W. M. Waite's *Implementing Software for Non-Numeric Applications*, Prentice-Hall, 1973. This program is a modification of the RT-11 version by P. H. Heinrich (DECUS number 11-307), so that it will run under RSX-11M.

Price: Available upon request

Contact: Professor S. Congiu
(039) 49-8070268

ISTITUTO DI ELETTRONICA
Via Gradenigo 6
35100 Padova Italy

Stage 2/RT-11

PDP-11 Operating System: RT-11

Keywords: • Pre- and postprocessors

Memory required: minimum 12K; optimum 16K (assuming the S/J monitor).

Stage 2 is a general-purpose, portable macro processor designed to carry software for abstract machines such as "FLUB." This implementation of Stage 2 is a modification of the DOS-11 version (DECUS number 11-158 by Peter H. Heinrich) for RT-11. DECUS number 11-307.

Restrictions: The Stage 2 command "Change I/O Channels and Copy Text" is modified.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

SUPERMAX

PDP-11 Operating System: RSTS, RSX, RT-11, TSX-PLUS™, ULTRIX-11

Keywords: • Assemblers • Compilers
• Microprocessor development

This family of cross-assemblers serves the following target processors: 6301, 6502, 6800, 6805, 6809, 68000, 7500, 7800, 7809, 7810, 8048, 8051, 8080/5, 8086/88, 9900, TMS7000, FAIRCHILD F8/3870, Z80, Z8000, and HITACHI Series 40. The cross-assemblers range from low-cost absolute assemblers to relocatable structured macro assemblers. Some versions also accept target manufacturers' source code format. Other versions use a DIGITAL MACRO-11-like source syntax. Linking loaders and an object module librarian are included in the higher-level SUPERMAX packages at no additional cost.

SUPERMAX programs produce different load module formats, selectable at run time by switches in the linker or (absolute) assembler command string. Those formats include most of the manufacturers' standard formats.

Documentation and a 1-year limited warranty are provided.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$500 - \$1750

Contact: Mark P. White, Vice President, Marketing
(617) 938-0709

CYMRIC COMPUTER SYSTEMS, INC.

10 G Roessler Road
Woburn, MA 01801

UCSD Pascal® Compiler

PDP-11 Operating System: p-System™

PRO Operating System: p-System™

Keywords: • Compilers • Language enhancers

The UCSD Pascal Compiler features the Pascal "standard" for microcomputers. UCSD Pascal is a fully developed language with extensions for systems development and commercial applications programming. A documentation package is included.

UCSD Pascal® is a registered trademark of the Regents of the University of California. p-System™ is a trademark of Pecan Systems, Inc.

Price: \$79.95 - \$179.95

Contact: Eli Willner
(718) 851-3100

PECAN SOFTWARE SYSTEMS, INC.
1410 39th St.
Brooklyn, NY 11218

UNIFORTH

PDP-11 Operating System: RSX, RT-11

Keywords: • Assemblers • Compilers • Debugging
• Device drivers/handlers

Memory required: 24K bytes.

This version of the FORTH programming language complies with the FORTH-83 standard with all its extensions. Available for RT-11, RSX-11M, and VMS-11 systems, as well as the Rainbow, UNIFORTH provides a complete programming environment with full macro assembler, video editor, interpreter, compiler, debugger, and floating-point arithmetic. Full operating system support includes a built-in driver interface for magnetic tape, diskettes, VT105 graphics, line printers, file system, and system requests. The Pro 350 version includes a high-resolution graphics package and XK communications support. All versions provide memory management and task extension. Options include cross-compilers, a programmer's manual, terminal communications plotting packages, and more.

A version of this product is available for VAX computers.

Price: \$295 - \$895

Contact: Arne A. Henden
(301) 552-9590

UNIFIED SOFTWARE SYSTEMS
P.O. Box 2644
New Carrollton, MD 20784

Vandata Z80 C Cross-Compiler

PDP-11 Operating System: RSTS, RSX

Keywords: • Compilers • Microprocessor development
• Programming tools

A full implementation of the C language targeted for the Z80 microprocessor, the compiler can be run on PDP-11, VAX, Z8000, and 68K hosts, as well as on CP/M™ systems. Based on the Whitesmiths compiler, Vandata C offers thorough support for ROM/RAM environments, extremely compact generated code, and the ability to intermix assembly language routines with C routines. An optimizer, Z80 assembler, linker, librarian, and other tools are provided with the compiler, as well as the facility to interface to other cross-compilers. A royalty-free run-time library is available.

CP/M™ is a trademark of Digital Research Inc.

A version of this product is available for VAX computers.

Price: \$3000

Contact: Dwight VandenBerghe
(206) 542-7611

VANDATA

17541 Stone Avenue North
Seattle, WA 98133

VLISP-11

PDP-11 Operating System: RT-11, TSX-PLUS™

Keywords: • Debugging • File transfer • Interpreters

Memory required: 16KW to 30KW.

This complete LISP programming environment runs on any PDP-11 or LSI-11. The VLISP interpreter is written in MACRO assembly language and implements 160 LISP functions, including several I/O functions providing access to the RT-11 file structure. The rest of the package is written in VLISP and includes a prettyprinter (with parenthesis matching and commenting facilities), a save utility, a list-oriented editor, a debugger, a file transfer utility, and an infinite-precision floating-point package. Additional versions are included that use the EIS or EIS/FIS instructions. DECUS number 11-617.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

WATBOL-11 Compiler

PDP-11 Operating System: RSTS, RSX

Keywords: • Compilers • Development tools • Education
• Programming tools

The Waterloo COBOL Compiler, developed by the Waterloo Foundation for the Advancement of Computing, is a subset of ANSI COBOL (1974). The implementation contains the COBOL nucleus, full sequential file support, and basic table-handling features. Fully qualified data names are allowed. The supreme objective governing the design of WATBOL-11 was to make a compiler useful in debugging programs. The compiler incorporates both high-speed compilation and comprehensive diagnostics support. The WATBOL-11 compiler is written in assembler MACRO-11.

Price: \$600

Contact: Elaine Harrison
(519) 886-3700

WATCOM PRODUCTS INC.

415 Phillip Street

Waterloo, Ontario N2L 3X2 Canada

WATFOR-77 Compiler

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Compilers • Development tools • Education
• Programming tools

The Waterloo FORTRAN Compiler, developed by the Waterloo Foundation for the Advancement of Computing, features speed of compilation, comprehensive error diagnostics at compile and run times, implementation of as much of full ANS FORTRAN IV as possible, and generation of reasonably efficient object code. The compiler is written in assembler MACRO-11.

Price: \$600

Contact: Elaine Harrison
(519) 886-3700

WATCOM PRODUCTS INC.
415 Phillip Street
Waterloo, Ontario N2L 3X2 Canada

XLISP: An Experimental Object-Oriented Language

PDP-11 Operating System: RSX, RT-11

Keywords: • Language enhancers

Memory required: 64KB.

This experimental programming language combines some LISP features with an object-oriented extension capability. XLISP was implemented to allow experimentation with object-oriented programming on small computers. Implementations are running on the PDP-11 under RSX-11, RT-11, and UNIX* V7; on the VAX under VAX/VMS and Berkeley VAX/UNIX*; and on the Z-80 under CP/M-80. Written in the C programming language, XLISP is easily extended with user-written built-in functions and classes. DECUS number 11-626.

* UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for VAX computers.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Law



Black Star Publishing Company/Fred Ward

C-11 Mortgage Banking II

PDP-11 Operating System: RSTS, RSX, RT-11, TSX-PLUS™

PRO Operating System: P/OS

Keywords: • Banking • Financial management • Real estate

This package provides such client information as amount and type of loan, commitment fee, monthly payment, and other closing information. The system computes amortization (monthly payment), annual percentage rate, payment figures for the truth-in-lending disclosure statement, and monthly payment. Reports generated include note, mortgage, closing statement, respa, truth-in-lending disclosure statement, preferred customer forbearance agreement, rate election form, and other documents.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$1500 - \$5000

Contact: Denis Peterson

(516) 483-3123

CBM ASSOCIATES, INC.

955 Front Street

Uniondale, NY 11553

Conflict of Interest

PDP-11 Operating System: CTS-300, RSTS, RT-11

Keywords: • Decision support • Information management

• Query facilities

This package allows law firms to quickly and easily determine if a conflict of interest would exist if a potential new client were brought into the firm. The software allows law firms to create and maintain files containing names of all clients and related parties of interest to the firm and to search easily and quickly through those files.

Price: \$3500

Contact: Suzanne Gunnells

(215) 825-7500

COMPUTE-R-SYSTEMS, INC.

5165 Campus Drive

Plymouth Meeting, PA 19462

Docket/Calendar System

PDP-11 Operating System: CTS-300, RSTS, RT-11

Keywords: • Information management • Scheduling

The Docket/Calendar System enables law firms to track dates and specific actions that are critical in complying with governing laws and regulations. The system permits files to be created and maintained that contain dates and specific actions that must be performed by those dates, in compliance with laws and regulations. Listings in various sequences are printed so that the responsible people can be notified.

The Docket/Calendar System is another aid to law firms wishing to computerize records keeping. The system builds a file of dates, along with actions to be performed by those dates, then generates reports to notify those who are responsible.

Price: \$4000

Contact: Suzanne Gunnells

(215) 825-7500

COMPUTE-R-SYSTEMS, INC.

5165 Campus Drive

Plymouth Meeting, PA 19462

General Ledger

PDP-11 Operating System: CTS-300, RSTS, RT-11

Keywords: • Accounting • General ledger

This package enables law firms to computerize accounting books and records. The system provides all financial statements, such as trial-balance and comparative-balance sheets, general ledger, income and expense statements, and statements of partners' capital expenses.

The General Ledger package interfaces to the Management Program 1000/Management Program 2000 timekeeping and billing system. That integration between the two packages allows the general ledger to be easily maintained, with little duplication of effort.

A version of this product is available for VAX computers.

Price: \$5000

Contact: Suzanne Gunnells

(215) 825-7500

COMPUTE-R-SYSTEMS, INC.

5165 Campus Drive

Plymouth Meeting, PA 19462

KRONIX-11™

PDP-11 Operating System: Idris™

Keywords: • Accounting • Billing • Financial management
• Management

This sophisticated multiuser, multitasking legal billing and accounting package is designed for the law firm desiring multiterminal input stations and is written in C. The Time Recording, Billing, and Accounts Receivable module processes time and disbursement entries, prints aged reports of billed and unbilled time and disbursements, generates prebilling reports, produces final bills in a wide variety of formats, processes cash receipts, prints past-due statements, and produces a comprehensive set of audit trails. Other modules maintain the law firm's management reports, general ledger and trust accounting records, and docket control system. The modules are fully integrated and can be added at any time and in any combination.

Idris™ is a trademark of Whitesmiths, Ltd.

Price: \$7000 - \$15,000

Contact: Deborah J. Brann

(800) 752-1915

KUBERNAN, INC.

Post Office Drawer 594

Winston-Salem, NC 27102

KRONIX-PC™

PRO Operating System: Idris™

Keywords: • Accounting • Billing • Financial management
• Management

This multiuser, multitasking legal billing and accounting package for DIGITAL's PRO-350/380 is written in C and is designed for the law firm desiring up to two data input stations. The Time Recording, Billing, and Accounts Receivable module processes time and disbursement entries, prints aged reports of billed and unbilled time and disbursements, generates prebilling reports, produces final bills in a wide variety of formats, processes cash receipts, prints past-due statements, and produces a comprehensive set of audit trails. Other modules maintain the law firm's management reports, general ledger and trust accounting records, and docket control system. The modules are fully integrated, and each can be added at any time and in any combination.

As a multitasking system, the system operator can use the terminal for data input while the system is posting, printing, or processing in the background. Another terminal can be added for inquiry or "look-up" purposes or as an additional data entry station. The system tracks billed time by individual working attorney rather than allocating all credit to the attorney responsible for the client or matter and tracks multiple originating attorneys for each client and the percentage of origination credit due to each.

Idris™ is a trademark of Whitesmiths, Ltd.

Price: \$3750 - \$8250

Contact: Deborah J. Brann

(800) 752-1915

KUBERNAN, INC.

P.O. Drawer 594

Winston-Salem, NC 27102

Law Firm Management System

PDP-11 Operating System: RSTS

Keywords: • Accounting • Billing • Cost accounting
• Information management

The Law Firm Management System is available as a complete stand-alone system or may be purchased through a software license. The functions within the system are fully integrated. The system handles client matters, collection of time/disbursements for a matter, trust accounting, interim and final billing, individual time management,

accounts receivable, cash flow/bank, and general ledger/financial statements. Complete documentation, training, installation, and support are included.

A version of this product is available for VAX computers.

Price: \$15,000 – \$30,000

Contact: George K. Fleming

(807) 623-2310

G. K. FLEMING AND ASSOCIATES LTD.

1118 Roland Street

Thunder Bay, Ontario P7B 5M4 Canada

Legal Time and Accounting System

PDP-11 Operating System: RSTS

Keywords: • Accounting • Cost accounting • Scheduling
• Word processing

This system, designed for a single or multigroup firm of lawyers, records and accumulates the lawyer's time on a case-by-case basis for billing and reporting purposes. Client billings, produced on a case-by-case basis, include lawyers' time and expenses. The user can input time from lawyers' time slips. The entry may include the lawyer, client, case, time involved, type case (probate, tax, and so forth), and free-text description of service rendered. Each lawyer's standard fee is built in but can be overridden on each entry. The system also includes complete word processing capability and accounting, including general ledger, accounts payable, and payroll.

Available reports are Current Month Billing, Accounts Receivable Aged Account, Billings in Suspense, Average Rate per Hour Billed versus Hours Incurred, and Billings by Case Type.

A version of this product is available for VAX computers.

Price: \$1500 – \$20,000

Contact: Marty Carpenter

(405) 843-7323

DATATEK CORP.

818 N.W. 63rd

Oklahoma City, OK 73116

Legal Time and Billing System

PDP-11 Operating System: RSTS

Keywords: • Accounts receivable • Billing
• Financial analysis • Report writer

This system applies reported time and expenses to appropriate client matters and monitors accounts receivable. The system provides comprehensive financial and management reports, including productivity analyses; revenue reports by attorney, client, and matter type; aged accounts receivable; and the value of unbilled time and unbilled advanced costs.

As many as five rates are stored for each attorney. Special rates can be applied for any client or matter.

The flexible billing process flags statements due by frequency, by threshold dollar amount, or by discretion. Bills can be generated by attorney, by client, or by matter. The system produces inquiry, edit, and final bills. The bill format can display as many as 1200 characters of explanatory notes for each time and expense entry. The system calculates tax for states that tax personal services.

Complete audit trails are created. In addition to the integral accounts receivable function, the system interfaces with other accounting modules, such as general ledger.

A version of this product is available for VAX computers.

Price: \$20,000

Contact: Ralph S. Trigg, Jr.
(505) 842-1247

AUTOMATED OFFICE SYSTEMS, INC.
P.O. Box 100
Albuquerque, NM 87103

Management Program 1000®

PDP-11 Operating System: CTS-300, RSTS, RT-11

Keywords: • Accounting • Accounts receivable • Billing
• Management

This set of programs offers efficiency, flexibility, and convenience to law firms in the area of financial accounting. The software tracks unbilled time, unbilled disbursements, and accounts receivable information. A comprehensive set of reports, in a wide variety of formats and sequences, is designed to manage unbilled inventory and accounts receivable and to automate the billing process. Management reports show profitability by type of law, attorney performance and utilization, and analysis of billing efficiency and provide exception reporting.

The package also features a bill-formatter program, which produces customized client bills, and a report writer program, which generates customized reports. In addition, an automatic transfer routine for unbilled time and disbursements and a status inquiry program enhance system flexibility.

A version of this product is available for the VAX computer.

Other options to the in-house system include word processing, litigation support, docket control, conflict-of-interest check, and general ledger.

Price: \$32,000

Contact: Suzanne Gunnells
(215) 825-7500

COMPUTE-R-SYSTEMS, INC.
5165 Campus Drive
Plymouth Meeting, PA 19462

PICALC: Lifetime Earnings Estimation**PDP-11 Operating System:** RT-11**Keywords:** • Calculation aids • Financial analysis • Insurance

PICALC estimates the present value of an individual's lost lifetime earnings, for use in personal injury, wrongful death, and medical malpractice arbitration and litigation. Options include gross-income and after-tax income estimates, single- and multiple-salary persons, retraining and alternative-employment allowances, valuation of working and home-oriented housewife's services, allowances for personal-consumption expenditures, estimation of in-kind contributions, and federal civil service, seamen, longshoremen, and other "special cases."

The program uses age/sex life expectancy and work-life expectancy look-up tables to determine the time span of regular and retirement pay earnings losses. A subroutine estimates federal tax liability for single and married persons.

Inputs include the injured party's dates of birth, injury, or death; expected trial date; preaccident income and fringe benefits; start-year retirement pay; proposed discount rate; and expected inflation rates. Outputs include present value and disbursement tables by year.

Customized special programs of this kind are available on three days' notice.

A version of this product is available for VAX computers.

Price: \$300 - \$400

Contact: David Bradwell, Ph.D., President
(415) 479-4980

DAVID BRADWELL AND ASSOCIATES, INC.
Economic Consultants
880 Las Gallinas Avenue
San Rafael, CA 94903

POMS (Professional Office Management System)**PDP-11 Operating System:** RSTS, RSX**Keywords:** • Accounts receivable • Billing • Report writer
• Scheduling

This series of programs for running a smooth, efficient office includes time entry/analysis, expense and disbursement reporting, work-in-process tracking, bill preparation, and more. POMS is available for fast, efficient, trouble-free installation. POMS is a turnkey system, providing efficient transfer from your current system to POMS.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: George B. Weaver, P.E.
(612) 571-1249

WEAVER & ASSOCIATES, INC.

928 Rice Creek Terrace

Minneapolis, MN 55432

Suspect-Identification System

PDP-11 Operating System: RSTS

Keywords: • Data base management • Government
• Information management

This comprehensive interactive system matches suspects to crime clues. In addition to cross-references to photos and other files, each person's records include information about his or her eyes, age, sex, race, height, scars, and other physical characteristics, as well as keys to a criminal record. The fingerprint table can include multiple print codes for one finger. In searching for a suspect on limited clues, the search key list can include connectors, such as "and," "must," "range," and "not."

A version of this product is available for VAX computers.

Price: \$8000 - \$12,000

Contact: Nathan I. Lieberman
(812) 479-6951

EVANSVILLE DATA PROCESSING CORP.

1010 S. Weinbach Avenue

Evansville, IN 47714-2994

Library Science



CAIRS Special Librarian

PDP-11 Operating System: Micro/RSTS, Micro/RSX, RSTS, RSX

PRO Operating System: P/OS

Keywords: • Data base management • Information management
• Media • Text management

This computer-assisted information/library retrieval system, developed by Leatherhead FRA, Leatherhead Surrey, United Kingdom, aids document management. Powerful Boolean searching generates sophisticated custom or standard reports. Featuring a thesaurus and decode functions, CAIRS can perform term explosion. The thesaurus could be your own controlled vocabulary or a variant on your industry's. Any field can be validated for vocabulary and a variety of data entry rules. Search strategies can be saved. Later, current awareness profiles can be routinely run or customized.

A document request library enables you to develop the kernel of an acquisition record. The acquisition librarian can then develop and catalog vendor orders and generate source, cost, holdings, circulation, and disposition reports.

Batch modules can accept data from key to disk, word processor, other applications, and new data bases. Government data base subsets (NTIS, DOE, and so on) can be imported and merged with internal material as an option.

From outside the United States, contact Information/Documentation, Inc., Box 17109, Dulles International Airport, Washington, DC 20041 (Telex: 903042).

A version of this product is available for VAX computers.

Price: \$1800

Contact: CAIRS Special Library System Sales

(703) 486-0900 or (800) 336-0800

INFORMATION/DOCUMENTATION, INC.

Box 46330, The Pentagon

Washington, DC 20050-6330

GS-400 Circulation Control System

PDP-11 Operating System: RSX

Keywords: • Data collection • Information management
• Statistics

Gaylord's service bureau approach to circulation offers libraries the benefits of an automated system without the need for on-site programmers or operators. The GS-400 system eliminates the tedious repetitive tasks of carding returned items and overdue-notice production. A light pen attached to a terminal is used to scan item and patron labels. File updating automatically generates daily, monthly, and yearly circulation and patron reports. Overdue notices and interlibrary loan statistics are produced weekly. Libraries sharing the same DIGITAL minicomputer can take advantage of a sophisticated ILL system. The

computer searches for ILL requests and alerts the owning library of the request, eliminating multiple forms and endless delays.

Management reports and statistics provide a detailed view of activity within specific locations. Circulation and usage reports are broken down by material type, call number group, and patron type as detailed as the library requires.

The GS-400 system offers libraries circulation control, reduced clerical effort, and improved resource sharing.

Price: Available upon request

Contact: Margaret A. Trinca

(315) 457-5070 ext. 321 or (800) 448-6160

GAYLORD BROS., INC.

P.O. Box 4901

Syracuse, NY 13221

LEAP (Library Electronic Acquisition Program)

PDP-11 Operating System: RSTS

Keywords: • Information management • Purchasing

This system helps libraries to keep track of the acquisitions function, looking after a book from ordering to receiving. The correct fund is updated, and funds reporting is done on request.

LEAP consists of nine subprograms that add a record, print purchase orders, receive or cancel orders, search for a record, modify a record, update the fund account, provide fund account reporting, update the vendor file, and list acquisitions. DECUS number 11-742.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

REF-11™

PDP-11 Operating System: Micro/RSX, RSX, RT-11, TSX-PLUS™

PRO Operating System: P/OS, RT-11, TSX-11

Keywords: • Data base management • Research
• Text management

REF-11 is an easy-to-use, menu-driven data base management system for references, which can be created, searched, updated, and output in various forms. The data base of references can be distributed among any number of references volumes (data files). Variable-length direct-access records are used within a reference volume to store the reference information. That format is as fast as fixed-length direct-access storage and uses less space than a text file would to store the same information.

REF-11 uses full-screen data entry to create or update references. The user uses the cursor keys or, if the terminal has none, character sequences to move between data fields.

References can be located within a reference volume by searching for any combination of authors, years of publication, reference title (or any

words in the title), and topics covered by the reference. Wildcards can be included in any of the search parameters. In addition, a reference can be located by a unique ID number assigned by the REF-11 system when the reference is created.

REF-11 can produce various listings of the references in a reference volume and can send them to any device or file on the computer system. The references included in the listing can be all of the references in a volume, just user-specified ID numbers, or just the references that meet search parameters. Optionally, the references can be alphabetized in the listing.

A unique feature of REF-11 is the formatted bibliographic listing. The page size, line spacing, punctuation, and format of the bibliography are controlled by the user. References can be alphabetized. Journal titles can be abbreviated from user-defined tables.

An optional utility program can read a paper, insert reference citations in the paper, and prepare a bibliography of the references cited. The bibliography can be included at the end of the paper. Another utility program can read references from text files and store them in REF-11 reference volumes.

REF-11 runs on any 80-column 24-line video terminal with direct cursor addressing and with any printer. Up to 10 terminal types can simultaneously be supported on a computer system.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$195 - \$350

Contact: Robert Parker

(203) 247-8500

DG SYSTEMS

322 Prospect Avenue

Hartford, CT 06106

STACS (Serials Tracking and Control System)

PDP-11 Operating System: ULTRIX-11

Keywords: • Data base management • Inventory • Statistics

This menu-driven package for automating libraries' serials management function can be used as a stand-alone system or with TECHLIB. Comprehensive support and customization are available. Four record types are present in the data base: bibliographic, copy, group route, and vendor.

Check-in is accomplished by using an issue-prediction algorithm for regular and normalized irregular issues, with eight coded frequencies and user prompts for irregular serials. The system also features automatic detection and claiming of late issues, generation of routing slips for groups or individuals, customized report generation, simple record creation and global editing, and subscription ordering through the TECHLIB interface.

Price: \$2100 – \$30,000

Contact: BASIS Coordinator
(800) 328-2648

BATTELLE SOFTWARE PRODUCTS CENTER
505 King Avenue
Columbus, OH 43201

ULISYS

PDP-11 Operating System: CTS-300, Micro/RSTS, RSTS

Keywords: • Bar coding • Data base management • Inventory
• Statistics

The heart of the ULISYS system is UDBM (ULISYS Data Base Management), which contains all the necessary software to create, update, and process the bibliographic data base, interactivity file, patron data base, patron activity file, search indexes, and authority file. The UDBM permits complete on-line cataloging of the bibliographic data base by technical services personnel or accepts data from any of the bibliographic utilities either through an interface or from magnetic tape.

A search index can be created at any time for any field in the bibliographic record, author, title, author/title, added entry author, added entry title, ISBN/ISSN, and call number. Patron records can be searched by patron name, street address, and patron number.

The following modules are linked to UDBM: circulation, messaging (electronic mail), acquisitions and fund accounting, reserve book room, community information system, system for the blind and handicapped, on-line public access, collection rotation system, newspaper index, interlibrary loan/interbranch loan, and serials control.

In the United States, contact Universal Library Systems, 1609-F Broadway, Bellingham, WA 98225 (206-676-4624).

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Jim Speight or Ana Bela Taborda
(604) 926-7421

UNIVERSAL LIBRARY SYSTEMS
205-1571 Bellevue Avenue
West Vancouver, British Columbia V7V 1A6 Canada

Management



Camerique

Action List

PDP-11 Operating System: CTS-300, RSTS, RSX, RT-11

Keywords: • Architecture • Civil engineering
• Project management • Scheduling

This system, used by project managers for expediting, progress chasing, and document control, complements Project Software's forward-looking planning and cost control system, the Project Cost Model. Action List is used to establish schedules itemizing information outstanding, drawing requirements, or materials procurement programs. Those programs define what must be done, by whom, and when. Action List is then updated regularly and used for progress chasing, recording what has been done, and highlighting critical items needing action. The system ensures that decisions are taken on time and that drawings, specifications, and other documents are completed and distributed when required.

Action List includes a flexible report writer that allows users to select what information is presented on reports.

Project Software has subsidiaries and distributors in the United Kingdom, United States, and other parts of the world. In the United States, contact John Gillespie (718) 624-2587, Project Software Inc., 257 Hicks Street, Brooklyn, NY 11201.

A version of this product is available for VAX computers.

Price: £1500 - £3000

Contact: Martin Barnes, Director
061-439 6639 or Telex: 666650
PROJECT SOFTWARE LTD.
Foden Lane, Woodford
Stockport, Cheshire SK7 1PT United Kingdom

ASA PMS (Project Management System)

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Graphics • Project management • Scheduling

This project management system allows both junior and senior schedulers to plan project schedules; to compare the project plan with job performance; to forecast future time, manpower, and cost requirements; and in a simulation mode, to evaluate the impact of management decisions. PMS is flexible and can be used in construction, utility, manufacturing, mining, R&D, and any other industry needing time analysis, resource allocation, and cost control.

The two independent PMS systems are CPM (Critical Path Method) and PDM (Precedence Method). Five major programs are available for the two systems:

- The Time Analysis Program computes the project schedule, compares the project plan with job performance, and produces reports.
- The Resource Allocation Program contains resource-loading and resource-leveling algorithms and produces reports.

- The Cost Program performs cost analysis, based on DOD 7000.2A specifications, computes earned values, and prints reports.
- The Multiproject Program can be used to combine data from separate files for corporatewide management of and interrelated projects.
- The Graphics Program draws well-designed charts on color graphics CRTs, pen plotters, and electrostatic plotters.

The system's modular design allows the user to select modules based on current needs. The system can be later expanded. Inexpensive modifications based on customer specifications are available.

Each Project Management System is installed with a 30-day money-back guarantee. A training program, manuals, and six months of free maintenance are provided.

A version of this product is available for VAX computers.

Price: \$6400 - \$25,000

Contact: Andrew Sipos
(212) 321-2408

ANDREW SIPOS ASSOCIATES
355-26B South End Avenue
New York, NY 10280

CAMIS (Consultants' Accounting and Management Information System)

PDP-11 Operating System: ULTRIX-11

Keywords: • Accounting • Information management

More than just an accounting package, CAMIS provides the consulting manager and executive with timely information on profitability by department, job, and client; employee utilization; productivity and contribution to profit; status of job billing; details and aging of work in progress; and other data essential to running a tight, well-disciplined, and profitable operation. Despite its power, CAMIS is user friendly, fast, and reliable. The menu-driven format, numerous prompts and messages, help features, error trapping, and sophisticated data backup and recovery procedures make CAMIS simple to use even for those with no prior computer experience. CAMIS is composed of four integrated modules: job cost, accounts receivable, general ledger, and accounts payable.

A version of this product is available for VAX computers.

Price: \$3750 - \$12,000

Contact: Steve Gordon
(617) 965-5059

BETA PRINCIPLES
203 Beethoven Avenue
Newton, MA 01940

Casting Costing, Pricing, and Profit Analysis

PDP-11 Operating System: XENIX™

PRO Operating System: XENIX™

Keywords: • Cost accounting • Financial planning • Metals
• Order processing

This system provides casting cost estimating for any metal type, all core and molding processes (including investment and die casting), all casting processing steps (including nondestructive testing), ladle additions, supplementary materials (insulated riser sleeves), salvage operations, and valuation of returns. This system also offers profitability analysis of recommended price versus quoted price, as well as full customer and individual casting profitability and shop performance.

The pricing function provides six quantity breaks, based on setup (or other method), user-definable best-price quantity, and complete pricing history.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$2000 – \$7000

Contact: Douglas A. Dallmer
(312) 357-1075

CAST METALS SYSTEMS, INC.

1813 K Mill Street

Naperville, IL 60540

Chronometrix

PDP-11 Operating System: RT-11, TSX-PLUS™

Keywords: • Cost accounting • Data collection • Personnel
• Project management

Memory required: 128KB.

This data collection system, written in DIBOL, provides real-time labor and job-costing information for productivity improvement, planning, and payroll. Applications include payroll, automatic recording of time and attendance information, employee location, employee's work status and performance, productivity, reports for individual and group performance and labor allocation, and job costing by department, cost centers, work orders, or jobs. Data collection and display terminals can be located throughout the office and plant.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$20,000 – \$40,000

Contact: John B. Hires
(201) 529-4553

JBH ASSOCIATES, INC.

200 Route 17 South

Mahwah, NJ 07430

DDM-11 (Due-Date Monitor)**PDP-11 Operating System:** CTS-300, RT-11**Keywords:** • Project management • Scheduling

This closed-loop, multilevel approach to the management of a work load as it is distributed over a staff allows the user to assign tasks with their due or critical dates to individuals. The user can also create cataloged and noncataloged descriptions of repetitive or recurring tasks and can enter entries as either permanent or nonpermanent. Year-end rollover and mass loading are supported. Assigning and responsible producers, coded tasks and manually input task descriptions, specific date calculations, and client/manager maintenance, including telephone numbers, are supported. The loop is closed by using the event reconciliation feature — marking the event as having been accomplished, by whom, and on what date. Complete historical and archival storage capabilities, along with historical reporting for tracking and audit purposes, are also supported. Reporting by producer, by client, and by task is available. Multiple restrictions can be placed on report generation, allowing the user to tailor a report. Late reports and elapsed-time-to-completion reporting are also supported.

Although developed by a CPA firm for certified public accounting and legal firms, the DDM-11 program can be used effectively for project management, controlling service contracts for equipment, and for any other type of management setting in which events must be performed by individuals by specific dates.

A version of this product is available for VAX computers.

Price: \$995 — \$1995**Contact:** C. Lee Cates

(615) 523-0553

DORROUGH PARKS & CO.

119 Summit Hill Drive

Knoxville, TN 37902

Executive Information and Action Screen**PDP-11 Operating System:** RSTS**Keywords:** • Data collection • Electronic mail
• Query facilities

Memory required: 256KB and 20MB of disk storage.

This program supplies cash balances by account; cash receipts, cash disbursements, billings to date, and bookings to date for the month; backlog; and accounts payable and accounts receivable details. The program stores personal data, such as addresses, phone numbers, birthdates, and a budget, and also allows inquiry to any financial programs for specific orders, accounts receivable and payable, or general ledger account. The program has a clock, a beeper to signal appointments, and a calculator and can send messages to other terminals or a message center.

Users are given comprehensive support and training. Each turnkey system includes up to four hours' field training for each package, at no charge, during the first 30 days following installation. A user manual is provided with each software package.

The software, written in BASIC-PLUS, runs under RSTS/E on PDP-11 and compatible minicomputers. End-user, OEM, and software reseller licensing agreements are available.

Price: \$1495

Contact: Warren C. Nagler

(714) 997-8927

JADTEC, INC.

546 West Katella Avenue

Orange, CA 92667

Key Conversational Planning System

PDP-11 Operating System: CTS-300, RSX, RT-11

Keywords: • Modeling/simulation • Planning aids

This interactive system, embodying linear and nonlinear programming and simulation, allows the user to project time forward, optimize based on future conditions and reoptimize, and make conditional changes. Major areas of application are logistics, scheduling, blending, raw material selection, process optimization, purchase and sales option selection, and inventory tracking. The Inventory Exploitation options allow a user to track tank compositions, volumes, and costs through time to compute the best inventory allocation for blending, shipping, receiving, and processing.

Key has 100- to 500-row LP solving capability, a matrix generator, and a report writer, as well as the ability to simulate process change impacts on downstream inventory through time. Scrolling of data tables and reports is standard. Interactive data changing and data entry speed the solution process.

A version of this product is available for VAX computers.

Price: \$23,750 - \$32,000

Contact: W. G. Welter

(713) 373-1905

ADVANCED MANAGEMENT TECHNOLOGIES

Box 71

Cypress, TX 77429

L/P (Labor Performance), MCBA, Inc.

PDP-11 Operating System: CTS-300, Micro/RSX, RSTS, RT-11, XENIX™

Keywords: • Employment • Payroll • Statistics

L/P helps identify productivity problems and improve labor use. The program permits easy, efficient entry, tracking, editing, and reporting of employee labor performance statistics and earnings and monitors the accuracy of data posted to MCBA's Payroll package.

The package accesses all features through convenient menus, allows reports to be optionally spooled for display or later printing, provides for multiple companies, and controls access to data with a security system. L/P provides for centralized data entry of labor transactions. Labor can be broken into direct and indirect status. The program generates attendance records for calculating payroll and provides for incentive pay. L/P supports clock card entry and editing and prints the Labor Performance Report, showing an analysis of each employee's and foreman's performance and productivity. The program reports on salaried employees and on incentive earnings, supports crew labor reporting, and provides for the entry of regular, overtime, and double-time wages.

L/P interfaces with MCBA's Payroll (PR), Shop Floor Control (SFC), Job Costing (J/C), Standard Product Routing (SPR), and Inventory Management (I/M) packages.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$2500 – \$4000

Contact: Sales Representative
(818) 957-2900

MCBA, INC.
2441 Honolulu Avenue
Montrose, CA 91020

Management Case Studies

PDP-11 Operating System: RSTS

Keywords: • Modeling/simulation • Project management

Memory required: 8K.

These 12 BASIC-PLUS programs illustrate business management operations and are based on examples from the book *Computer Augmented Cases in Operations and Logistics Management* by William L. Berry and D. Clay Whyback, published by South-Western Publishing Company. The programs included simulate the operations of seven companies. DECUS number 11-56.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

MANEX (Manpower Expenditure Recording)

PDP-11 Operating System: CTS-300, RSTS, RSX, RT-11

Keywords: • Billing • Cost accounting • Employment
• Personnel

This system provides control and analysis of hours booked to projects and overheads within a company and can be applied in any project- or cost center-oriented organization. The principal input document is a weekly time sheet prepared by each person. A range of reports can be generated, giving the weekly and cumulative hour totals by project,

overhead, section, activity, and staff agency. In addition, project billing and department costing reports can be produced.

This easy-to-use interactive system with many on-line data checks to minimize errors contains an integral backup program that provides file security and passwords to restrict access to sensitive information. The MANEX coding scheme can be tailored to codes already in use as part of an implementation charge.

Project Software has subsidiaries and distributors in the United Kingdom, United States, and other parts of the world. In the United States, contact John Gillespie (718) 624-2587, Project Software Inc., 257 Hicks Street, Brooklyn, NY 11201.

A version of this product is available for VAX computers.

Price: £1500 - £3000

Contact: Martin Barnes, Director
061-439 6639 or Telex: 666650
PROJECT SOFTWARE LTD.
Foden Lane, Woodford
Stockport, Cheshire SK7 1PT United Kingdom

MAPPS (Management and Project Planning System)

PDP-11 Operating System: RSX

Keywords: • Project management • Report writer
• Scheduling

MAPPS is a management and planning control tool. Input has been simplified for user ease, and the program features user-friendly operating procedures, with the user having extensive control over the output reports. A unique Select-Sort-Report procedure permits use of more than 27 attributes for selecting data and sorts output in more than 26 ways for more than 28 report formats. Complete user control over the selection and structuring of reports gives this program unlimited flexibility for the decision-making manager. Great success in both use and reporting has been achieved by users with little prior networking experience.

The user can specify problem size and variables to permit efficient use of disk storage space. The program analyzes any arrow or precedence network of up to 32,000 activities. Activities can be scheduled for one to seven work days a week. The day of the week on which the activity starts and stops can also be specified. Multiple calendars are permitted. Precedence networking permits lag scheduling, which simplifies event scheduling. The system also features event data constraints of "not later than," "not earlier than," or "on" user-specified dates. The program can schedule up to 8000 project days. The user may specify an unlimited number of holidays.

The program permits cost specification for each activity, with reports on both estimated and actual values. With field reports based on updated information, the system can be used to provide a variety of

management reports comparing initial information to upgraded actual information. A full audit trail of all changes and up to 14 pages of text are part of every update.

The system has an optional utility with complete screen and plotter graphics. Cash-flow plots, resource usage plots, and network logic can be displayed on the screen, on the printer, or on the plotter, which produces multicolored plots.

A version of this product is available for VAX computers.

Price: \$65,000

Contact: Neal B. Mitchell III
(617) 366-0800

MITCHELL MANAGEMENT SYSTEMS, INC.
2000 West Park Drive
Westborough, MA 01581

Membership

PDP-11 Operating System: RSTS

Keywords: • Data base management • List processing
• Recruiting • Report writer

This highly flexible membership system permits each organization to develop a system appropriate to its needs. The system combines routine membership requirements with the latest word and data processing technologies, permitting easy access to data and providing for the dynamic data processing needs of the organization. Because of the variations among membership organizations, the tools provided quickly customize features needed for membership. The system includes data base management, membership mailing lists, dues accounting, conferences and annual meetings, exhibition management, and word processing.

No longer do you have to use entry and display screens planned for other requirements. Furthermore, new requirements that occur after system installation do not necessitate calling for programming assistance. The system can be expanded by adding new data elements to the data dictionary.

Each time new data elements are added or changed, the data base management system automatically adjusts the files. Existing data entry and display screens are edited in minutes, permitting immediate access to new information. Similarly, existing reports can be edited quickly.

A version of this product is available for VAX computers.

Price: \$3000 - \$10,000/module

Contact: E. Jackson Smith
(301) 296-9032

SMITH, ABBOTT, AND COMPANY, INC.
300 E. Joppa Road
Baltimore, MD 21204

PCM (Project Cost Model)

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Architecture • Civil engineering • Construction
• Project management

This project management system provides project managers with a tool for integrated project control of time, money, and resources. PCM includes facilities for planning, critical-path network analysis, resource allocation, scheduling, cost control, and cash-flow forecasting. Modules for each of those functions are available separately if required. A comprehensive range of printed and plotted reports, such as project network drawings, bar charts, and histograms, are available with very selective reporting options.

PCM can be used with equal facility by project promoters, project managers, designers, and construction contractors to prepare estimates, monitor progress, and plan remaining work on a project. PCM is particularly effective when a forecasting and decision-making support tool is required. PCM allows forecasts of the consequences of alternative courses of action to be provided before project management decisions are taken.

Project Software has subsidiaries and distributors in the United Kingdom, United States, and other parts of the world. In the United States, contact John Gillespie (718) 624-2587, Project Software Inc., 257 Hicks Street, Brooklyn, NY 11201.

A version of this product is available for VAX computers.

Price: £5000 – £20,000

Contact: Martin Barnes, Director
061-439 6639 or Telex: 666650

PROJECT SOFTWARE LTD.

Foden Lane, Woodford

Stockport, Cheshire SK7 1PT United Kingdom

Phoenix-Pro™

PRO Operating System: P/OS

Keywords: • Data base management • Decision support
• Networking • Project management

DIGITAL distributes this product under license from Advanced Technology, Inc.

Phoenix-Pro Project Management System Planning and Evaluation provides management information to the professional manager and analyst, using interactive graphics, query techniques, high-quality plotted graphics, formatted/sorted output, and document-ready and printed tabular data. The system's three modules allow the user to track at a glance, using one data base in a variety of ways:

- Milestone Tracking provides managers with printed reports of their projects' status.

- Milestone Plotting uses a common data base with milestone tracking for plotting schedules, including milestones and activities.
- Network Analysis provides program/analyst managers with an interactive graphics network analysis model containing a what-if analysis capability. This module provides a series of unique output formats featuring detailed statistical output, as well as document-quality, high-level network drawings and Gantt charts.

P/OS hard disk operating system is prerequisite.

Refer to SPD #A4.79.xx when requesting information on this product from your local DIGITAL sales office.

Phoenix-Pro™ is a trademark of Advanced Technologies, Inc.

Price: \$1795

Contact: Consult your local DIGITAL sales office (see Introduction).

PMM/MBS Job Cost System

PDP-11 Operating System: CTS-300, RSTS, RT-11

Keywords: • Cost accounting • Project management
• Scheduling

This system records job cost information in a form that facilitates management analysis. The data base retains summary contract information in the job master file and permits the breakdown of the job into major segments or phases. Each phase is divided into component steps or tasks. In each of those areas, the system provides budgeted or estimated cost and price/fee figures and actual cost accumulations for the current period, year to date, and job to date. A variety of fee-earned/revenue-recognition methods and the ability to record job billings are included.

The tasks provide the ability to compute percent completely, using several methods. The individual task percentage completions are then aggregated to present a summary completion estimate for the entire job.

The cost codes allow standard cost and price/fee rates for all common cost elements of a job, such as labor and material types. The system also allows overriding the standard rates or entering cost elements not set up on the cost codes data set.

A direct interface into our General Ledger, Accounts Payable, and Payroll systems is available.

Price: \$4000

Contact: Victor Goldberg
(212) 872-7732

PEAT, MARWICK, MITCHELL & CO.
345 Park Avenue
New York, NY 10154

Practice Management

PDP-11 Operating System: CTS-300, RT-11

Keywords: • Accounts receivable • Billing • Scheduling

This system for firms that require a detailed breakdown of time and billing information allows the user to divide a client's work in process into particular matters or engagements. Many accountants use the Practice Management system to process time and billing for some of their attorney clients, making the system both a source of revenue and a tool for managing the accounting firm.

The Practice Management system has all the features of the Time and Billing system, as well as multiple-office breakdown capability; 4-digit matter number and 10-digit user-definable sort codes; 999 user-definable billing codes; open-item accounts receivable; automatic invoicing capability — eight invoice formats; statement preparation; production reports and work-in-process reports by client, by matter, or by employee; a transaction-history file for future scheduling; an automatic retainer billing, realization rate, and percentage report; and four billing-adjustment allocation methods.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Bob Spowls
(904) 434-2685

DIGITAL SYSTEMS, A DIV. OF UCCEL
114 E. Gregory Street
Pensacola, FL 32501

PREMINI

PDP-11 Operating System: RSTS, RSX

Keywords: • Engineering • Project management • Scheduling

This powerful and comprehensive critical path-based project management tool applies to almost any high-visibility/high-risk project. PREMINI performs all normal critical-path calculations with single or multiple calendar specifications. Hourly time units can be specified for maintenance, outage, start-up, or commissioning projects. Free Float can be automatically slipped under user control to improve scheduling or cash-flow results. PREMINI's features and algorithms are particularly effective in the resource-constrained scheduling mode. For example, resources need not be allocated uniformly over an activity duration but may be specified in a nonlinear form. Although very powerful, PREMINI is easy to both learn and use.

A versatile report generator is provided. Users can easily and quickly write their own reports and modify standard reports. The report generator can produce bar charts and listings more than 200 characters wide. Graphics options include user-definable bar charts and network logic diagrams.

The "VTIN" input option (for VAX only) permits the user to easily define menus and input screens for PREMINI, including the specification of such attributes as field names, defaults, and on-line help text without programming.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Jack Way

(416) 488-3088

K & H COMPUTER SYSTEMS (CANADA) LTD.

Box 371, Station K

Toronto, Ontario M4P 2G7 Canada

Project Delta, Section C: Business

PDP-11 Operating System: RSTS

Keywords: • Accounting • Education • Financial analysis

Memory required: 8K.

Section C contains business programs. DECSN is a management-decision simulation for 10 to 60 participants. MANAGE is a management-decision simulation for three teams. DYNPRO is a dynamic programming model and business simulation tool. DEPCOM provides four methods for calculating depreciation. ANNUIT performs annuity analysis. EQUITY computes cost of equity capital. INSTMT produces an income statement. LENDER performs simple loan analysis. TRUINT computes true annual interest rate. LESSEE compares lease with purchase. SALES prints a sales commission report. MKBUY performs make versus buy analysis. MORGAG performs mortgage analysis. GNPSUM provides a gross national product summary. EXDRSK performs extended-risk analysis. STKRTN writes a stock-return report. STKSMO is an exponential smoothing stock guide. STKVAL writes a stock-value report. STKINC analyzes a stock merger incentive. BNDPRC performs bond-price analysis. BNDYLD performs bond-yield analysis. BNKRSV performs bank-reserve calculations. CAPINV performs capital-investment analysis. EXSMOO is an exponential smoothing on price data. BALSHT is a balance sheet and income statement. INACNT shows national income and product accounts. INOUT analyzes interindustry product flow. BUDGET is a department manager's budgeting program. DECUS number 11-7.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RISKAN1/RISKAN2 (Risk Analysis — General/Risk Analysis — Accounting)

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Accounting • Decision support

• Modeling/simulation • Spreadsheets

RISKAN1 provides a business executive with simulation capabilities and analytical information about strategic planning or manufacturing

(for example, tolerance analysis). Specifically, the program allows the business executive to analyze or compute the expected risk of a proposed product line diversification or company acquisition in terms of the size of the market, the size of the company's investment commitment, and a perceived level of competition — either none or an estimated market share of each competitor — before and after the proposed business venture. The decision maker can also look at manufacturing concerns such as material planning or machining operations in a quality-control operation. The output of the analysis may include an estimate of the numerical risk involved, accompanied by an appropriate recommendation about whether to diversify, and various risk profiles for additional information.

Using this business planning tool, the executive can input a data file and simulate what-if hypotheses concerning, for example, the chances of a successful new-product introduction in a highly competitive marketplace or how the chance of success in a specific market varies with the number of competitors or market share. Graphical output is available to illustrate in an analytical fashion some such relationships. RISKAN1 allows the business executive to simulate the decision-making process under conditions of uncertainty.

In addition, RISKAN2 provides detailed risk analyses for standard spreadsheet-type accounting (financial analyses), including risk profiles.

The price is a 1-time license fee.

A version of this product is available for VAX computers.

Price: \$5000 — \$7500

Contact: Jon Prescott

(619) 247-7219

J & S ASSOCIATES

13407 Quapaw Road

Apple Valley, CA 92307

SIBYL/RUNNER® Interactive Forecasting System

PRO Operating System: P/OS

Keywords: • Decision support • Financial planning
• Forecasting • Statistics

This comprehensive package of programs for time-series analysis and forecasting consists of 18 time-series techniques and multiple regression. SIBYL provides screening of alternative forecasting techniques and identification of methodologies most appropriate for a given situation. SIBYL/RUNNER reads raw data from a file or from data typed in at a terminal and performs a preliminary analysis of the data. Available analytical techniques include autocorrelation analysis, cyclical identification, and moving-average transformations.

The user can, however, override the suggestions and apply any of the 18 available forecasting techniques. Those include Box-Jenkins, classical and Census II Seasonal Decomposition, generalized adaptive filtering, Harrison's harmonic smoothing, time-series multiple regression, exponential smoothing, moving averages, and curve fitting. Also included are comparison and combination of the results obtained from the application of different forecasting methods; data management, such as file creation, file editing, transformation of variables, and graphing; single and linear moving averages; curve fitting; and trend analysis.

The results obtained from applying those forecasting methods are summarized and reported to aid the forecaster in evaluating alternative techniques. The user can review and correct cyclical patterns in the data with manual overrides to the final forecast.

The Professional version interfaces with Lotus® software.

Lotus® is a registered trademark of Lotus Development Corp.

Price: \$995 – \$15,000

Contact: Tim Davidson
(617) 861-7580

TEMPLE, BARKER & SLOANE INC.
Applied Decision Systems
33 Hayden Avenue
Lexington, MA 02173

Time and Billing

PDP-11 Operating System: CTS-300, RT-11

Keywords: • Accounts receivable • Billing • Cost accounting
• Scheduling

The Time and Billing system establishes a flexible, comprehensive information system that provides management controls and analytical reports to evaluate the time spent on a client's work. The heart of the system, the billing code file, allows up to 99 codes to be grouped into 16 major categories by billable and nonbillable time.

The system provides time and expense, billing, cash receipts, and file maintenance entry journals; work-in-process reports by client or employee; gross profit by client; accumulation of year-to-date billing and adjustments; a work-in-process review sheet; billed and unbilled receivables; aged accounts receivable reports by client or employee; client billing and billing code analyses; productivity, time and expense, and billing analyses by employee; automatic monthly A/R statements; and a monthly-charge capability.

Price: \$2350

Contact: Bob Sprowls
(904) 434-2685

DIGITAL SYSTEMS, A DIV. OF UCCEL
114 E. Gregory Street
Pensacola, FL 32501

Time Management

PDP-11 Operating System: CTS-300, RSX, RT-11

Keywords: • Billing • Cost accounting

Time Management, which can interface with Digital Systems' Practice Management, allows a firm to track the actual time spent, as compared to the time budgeted, for a client or an engagement. Time Management also allows a firm to review time spent last year for a month or a year at the client, engagement, employee, or code level.

The system provides automatic accumulation of time, when interfaced with Practice Management; reporting by month or year; budgeting capabilities; and both predefined and user-defined reports.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Bob Sprowls
(904) 434-2685

DIGITAL SYSTEMS, A DIV. OF UCCEL
114 E. Gregory Street
Pensacola, FL 32501

TOPMAN (Total Planning and Management), Version 2.0

PDP-11 Operating System: RSX

Keywords: • Graphics • Project management • Report writer
• Scheduling

This system relieves project and functional managers of time-consuming planning and record-keeping tasks through calendar-based graphic and straightforward reports. Great flexibility and a variety of reports are available for project, division, subdivision, or individual use. TOPMAN handles multiproject networking.

- Initial planning: Project staff sets up a plan, including an activity list, start dates or dependence on other activities, span times, estimated resources required, milestones, and department or individual responsibility assignments.
- TOPMAN generates Gantt chart plots to show activity descriptions, span times, critical path, dependencies, milestones, and responsibility assignments. Budgeted resource data is displayed in distributed or cumulative graphic plots and printer reports.
- Updating: Work progress, resource expenditures, exception reporting criteria, and/or plan amendments are entered by the user.

TOPMAN generates bar chart, graphic plot, and printer reports to reflect work achieved in activities, probable complete dates, slack, a recalculated critical path, resources expended, dollars required to complete, earned value, cost trend, cost variance, and exception reports.

Exceptional flexibility is afforded by SCOUT, our interactive screen-oriented tabular report generator.

Combined with our Interactive TOPMAN Preprocessor (ITP), TOPMAN is very "user friendly." ITP steps the user through a series of screen-displayed forms to build a project schedule plan and budget. As work proceeds and costs are incurred, prompts lead the user through updating and replanning cycles to help the project manager control the project.

A version of this product is available for VAX computers.

Price: \$20,000 – \$30,000

Contact: G. H. Marlow, President
(215) 348-1200

APPLIED MANAGEMENT METHODS, INC.
201 N. Broad Street
Doylestown, PA 18901

VUE

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Construction • Project management • Scheduling

This interactive project management system uses the critical-path method to spotlight activities that need to be completed on schedule. Up to 3000 activities can be tracked for each project, with almost unlimited activities available through the multiproject option.

VUE is easy to use and menu driven, requiring minimal user training. The project manager can modify information, see the project from several perspectives, generate what-if scenarios, and respond to unexpected developments with new schedules and strategies.

VUE's reports show the impact of changes in timing, cost, and resources on activities and on the overall project. Those reports cover the entire project, the activities of one team or department, or groups of activities. VUE's standard report selection includes network diagram, bar chart, schedule, progress, activity times, predecessor, node scheduled, cost, resource, and current work.

Available options for VUE include multiproject capability, plotter graphics output, time-scaled network diagram, and a custom report generator.

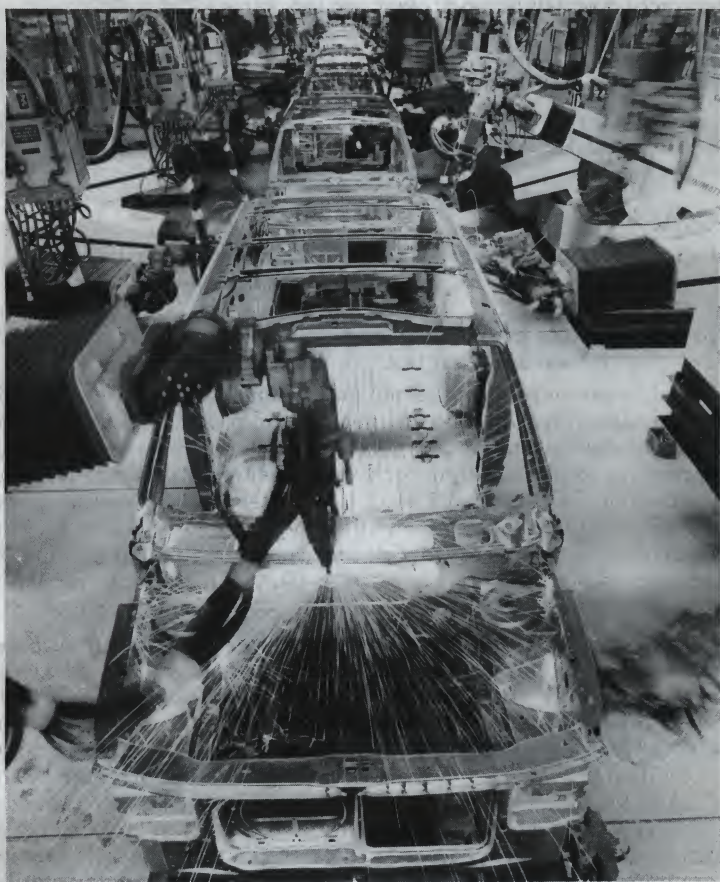
A version of this product is available for VAX computers.

Price: \$995 – \$26,000

Contact: John Enyedy
(408) 257-7700

NATIONAL INFORMATION SYSTEMS
20370 Town Center Lane, Suite 130
Cupertino, CA 95014

Manufacturing



Black Star Publishing Company/Andrew Sacks

6600 Plant Management System

PDP-11 Operating System: RSX

Keywords: • Bill of materials • Inventory • Production control
• Quality control

This series of modules is designed to aid in the management of food processing plants. A formulation module uses linear programming to provide least-cost formulation of food products. A quality control module uses statistical and graphical techniques to track various quality control data. Product costing permits the application of cost items to develop a total product cost inclusive of supplies, labor, and overhead. A production scheduling module is used for the entry and development of production schedules and inventory programs.

Price: \$17,500 – \$35,000

Contact: T. Brient Mayfield

(615) 691-2041

COMPUTER CONCEPTS CORP.

9041 Executive Park Drive, Bldg. 500

Knoxville, TN 37923

A-CLASS

PDP-11 Operating System: CTS-300, DSM (DSM-11), IAS,
MicroPower/Pascal, p-System™, RSTS,
RSX, RT-11

Keywords: • Data base management • Information management
• Production control

This system provides classification and coding systems for group technology, design retrieval, and computer-aided process planning. Computer graphics systems require classified design libraries to provide total recall of existing designs for design research. A-CLASS is modular to provide for classified files of raw materials, commercial parts, manufactured piece-parts, assemblies and finished products, tooling, jigs and fixtures, and machine tools and capital equipment. Computer-aided process planning systems use A-CLASS class codes for structured files of process plans and generative process planning data.

Extended manufacturing data base systems use A-CLASS multicodecs for part family manufacturing and group technology analysis. Use of class codes for FMS planning provides maximum visibility of opportunities for integrated manufacturing systems and optimum cell design. A-CLASS can be used to implement and upgrade MICLASS and MULTIGROUP systems and is ideal for programming Brigham Young D-CLASS file handlers. N/C programming uses A-CLASS class codes to develop master family programs for families of similar parts. Integrating A-CLASS class codes with MRP systems increases production by grouping parts into families for common processing using similar setups and tooling.

Turnkey applications are available on fixed-fee development contracts.

p-System™ is a trademark of Pecan Systems, Inc.

A version of this product is available for VAX computers.

Price: \$5000 - \$150,000

Contact: Giles E. Lovelace
(803) 577-7838

LOVELACE LAWRENCE & CO.
23 Broad Street
Charleston, SC 29401

AADC (Advanced Automated Data Collection)

PDP-11 Operating System: RSTS, RSX, RT-11, ULTRIX-11

Keywords: • Automotive • Data collection • Data conversion
• Real time

This customized software system for the automotive industry provides real-time data collection, event logging, alarming, and notification. The system produces event logs, production reports, alarm reports, down-time reports, and retrieval of prior days' information. All inputs to the process are analog signals. The process being controlled is approximately 100,000 square feet.

All CRT screens and output reports are customized to the process and customer specifications.

A version of this product is available for VAX computers.

Price: \$10,000 - \$250,000

Contact: Jerry Barber
(616) 949-9360

PROFESSIONAL COMPUTING RESOURCES, INC.
1009 Parchment S.E.
Grand Rapids, MI 49506

ABC/Inventory System

PDP-11 Operating System: Micro/RSTS, RSTS

Keywords: • Inventory • Warehousing

This on-line multiple-warehouse, multiple-location inventory system, written in COBOL, provides information on what is stored and where, cost, quantity, whether reserved or on order, and what to reorder. Inventory items and parts can be reserved or spot-issued. Screens provide the status of a requested stock item, a description, the quantity on hand and on order, the number reserved, the price, a store's location, the order-point minimum, the economic order quantity, the expected delivery date, and the substitute-stock number. A store's catalog showing all stock items by warehouse or total can be printed on demand. Monthly stock activity, turnover, and day's use reports are also available. Daily shortage and reorder reports are automatically issued to provide purchasing data.

A version of this product is available for VAX computers.

Price: \$11,000

Contact: V. W. Ruskin
(604) 682-3808

ABC MANAGEMENT SYSTEMS INC.

805 Dupont Street, Suite 3
Bellingham, WA 98225

ABCON (Automated Batch Control)

PDP-11 Operating System: Micro/R SX, RSX

Keywords: • Graphics • Pharmaceutical • Process control
• Real time

Memory required: 512KB to 2MB.

This batch control package provides a simple, modularized approach to batch process control and includes recipe building and modification, step sequencing, and process function activation. ABCON is interfaced to the process through programmable controllers or other suitable I/O hardware. The package permits automatic, semiautomatic, and manual execution of steps; allows monitoring of multiple steps for proper cutoff; and provides accurate reports on each batch.

A version of this product is available for VAX computers.

Price: \$55,000 - \$60,000

Contact: James E. Apple, Marketing Manager
(713) 496-3220

SETPPOINT, INC.

950 Threadneedle
Houston, TX 77079

ADACS (Advanced Distributed Acquisition and Control System)

PDP-11 Operating System: Micro/R SX, RSX

Keywords: • Process control • Production control

ADACS provides a fill-in-the-blanks system that allows the user to configure digital scan points, scan rates, alarm limits, continued action, and historical data storage parameters. The user can also build custom color graphics display screens and link them to point in the data base for real-time refresh or data entry. The system also provides for custom update and logs and custom calculations in stand-alone, redundant, or distributed networks.

A version of this product is available for VAX computers.

Price: \$12,500 - \$150,000

Contact: Ken Murphy
(713) 486-1712

MODULAR DATA SYSTEMS, INC.

2525 Bay Area Boulevard, 3rd Floor
Houston, TX 77058

ADLIB

PDP-11 Operating System: RSX, RT-11

Keywords: • A/D, D/A • Device drivers/handlers
• Quality control • Shop floor control

The ADLIB subroutine software packages support ADAC's extensive line of analog and digital I/O boards for use with DIGITAL minicomputers. ADLIB gives the user a flexible real-time data acquisition and control software package that uses easy-to-understand subroutine calls. The packages support analog high-level, low-level, and thermocouple inputs and achieve maximum throughput rate.

DMA operation with ADAC's 1622 controller provides direct transfers to and from Q-bus memory. Applications requiring voltage or current loop outputs are also provided. The analog routines allow the user to select sequential or random-access channels, programmable gain amplifier settings, internal or external triggering, and many other parameters. Digital inputs and outputs, real-time clock functions, pulse counting and generation, and ADAC's multiple-interrupt controller are also fully supported.

A version of this product is available for VAX computers.

Price: \$595 - \$1295

Contact: Lawrence Pelavin
(617) 935-6668

ADAC CORP.
70 Tower Office Park
Woburn, MA 01801

AGVS and ASRS Flexible Manufacturing Systems

PDP-11 Operating System: Micro/RSTS, RSX

Keywords: • Information management • Robotics • Security
Memory required: 512K.

This real-time, flexible manufacturing system controls and monitors automatically guided vehicle systems and automatic storage and retrieval systems. It is written in assembly language and FORTRAN.

Price: \$50,000

Contact: Frank Calabrese
(301) 662-4181

ACCO BABCOCK, INC.
P.O. Box 460
Frederick, MD 21701

AIM (Automated Industrial Monitoring)

PDP-11 Operating System: RSX

Keywords: • Data collection • Energy
• Facilities management • Process control

AIM is a field-proven standard software product used to monitor and control industrial processes. AIM is a plant automation and supervisory process control system that scans, alarms, trends, logs, and provides closed-loop control of the industrial process.

The system is defined by using a fill-in-the-blanks language that specifies plant inputs, control outputs, and any special calculations and logic procedures. The system provides user-created color graphics displays and interacts with operator keyboard consoles to allow plant operator control and easy access to plant data. Optional software packages are available to further enhance AIM's capabilities.

For users requiring special applications, AIM provides FORTRAN subroutines to access the complete data base, thus allowing interaction with standard processing. Since AIM makes no modification to the operating systems, benefits are realized by its upward compatibility to DIGITAL's current operating system level.

AIM has been applied in chemical plants, refineries, steel plants, water treatment and manufacturing facilities, and laboratories.

A version of this product is available for VAX computers.

Price: \$36,000 - \$72,000

Contact: Gerald D. Newman
(713) 789-8880

BILES & ASSOCIATES
6161 Savoy Drive, Suite 500
Houston, TX 77036

AIM Batch (Automated Industrial Monitoring)

PDP-11 Operating System: RSX

Keywords: • Chemical • Data collection • Process control
• Real time

AIM Batch is a field-proven standard software product used to monitor and control continuous, batch, or semicontinuous industrial processes. AIM Batch is a plant automation and supervisory process control system that scans, alarms, trends, logs, and provides closed-loop control of the process.

AIM Batch uses a simple fill-in-the-blanks language and CRT-prompted communications to allow nonprogrammer process engineers to easily define and modify batch sequences and recipes. The system provides user-created color graphics displays and interacts with operator keyboard consoles to allow plant operator control and access to plant data. Optional software packages are available to further enhance AIM Batch's capabilities.

For users requiring special applications, AIM Batch provides FORTRAN subroutines to access the complete data base, thus allowing interaction with standard processing. Since AIM Batch makes no modification to the operating systems, benefits are realized

by its upward compatibility to DIGITAL's current operating system level.

AIM has been applied in chemical plants, refineries, steel plants, water treatment and manufacturing facilities, and laboratories.

A version of this product is available for VAX computers.

Price: \$45,000 – \$90,000

Contact: Gerald D. Newman
(713) 789-8880

BILES & ASSOCIATES
6161 Savoy Drive, Suite 500
Houston, TX 77036

AIMS (Advanced Integrated Manufacturing Systems)

PDP-11 Operating System: XENIX™

Keywords: • Bill of materials • Inventory • Scheduling
• Shop floor control

AIMS is an integrated manufacturing management information system. The package is designed in modules and can be installed as a total system or piecemeal; other modules may be added as required.

Free updates, a toll-free support line, on-site installation and training, and limited customization are provided. A comprehensive software maintenance program is available.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$8000 – \$44,000

Contact: Ram Todatry
(312) 850-7244 or (800) 323-6885

MARTEK, INC.
825 N. Cass Avenue
Westmont, IL 60559

Allen-Bradley Translator Software

PDP-11 Operating System: RSX

Keywords: • Programming tools • Translators

This software provides users of Allen-Bradley programmable controllers with a means of documenting programmable controller logic by merging explanatory text comments with ladder diagram displays. Complete cross-reference listings, identification of data table contents, alphanumeric sortings of mnemonics, and graphic representations of I/O usage are also included with each product. When the Translator Software is used with NET Communication Software, the user can upload and download programmable controller programs over the Allen-Bradley Data Highway.

A version of this product is available for VAX computers.

984 Manufacturing

Price: \$6700 – \$8040

Contact: Joe Walker, Senior Product Engineer

(216) 449-6700 ext. 3810

ALLEN-BRADLEY CO.

747 Alpha Drive

Highland Heights, OH 44143

AMS (Apparel Manufacturing System)

PDP-11 Operating System: RSX, RT-11

Keywords: • Accounting • Order processing
• Production control • Textiles/clothing

AMS is an integrated system that manages apparel manufacturing activity, including order entry, cut and sold planning, inventory control, sales analysis, and manufacturing cut control. AMS also manages accounting functions, including billing, accounts receivable, purchasing, accounts payable, general ledger, financial reporting, and word processing.

Price: \$9000 – \$18,000

Contact: Harmon Houghton, President

(201) 348-6688

EXTENDED TECHNOLOGIES CORP.

1023 Boulevard East

Weehawken, NJ 07087

APPS/2 (Automatic Part Programming System, Version 2)

PDP-11 Operating System: RSX, RT-11

Keywords: • CAD/CAM • Numerical control

APPS/2 simplifies the preparation of part programs for NC and CNC machine tools. The core system uses input from a digitizer to define the geometry of complex contour shapes. That set of basic geometric data is then smoothed and analyzed by the system software to determine the arc and straight-line components of the shape. A postprocessor translates the arcs and straight lines into the command format that will drive the desired machine tool. Any 2-dimensional cutting operation is a potential application.

Although developed primarily for contoured nondimensioned shapes, APPS/2 also digitizes straight lines, arcs, and skips by specifying endpoints rather than by tracing. That form of entry is called point-to-point mode. A third mode provides for the direct keyboard entry of data when dimensions are well defined. All three entry modes may be used interchangeably on a single piece.

Software (\$15,000) includes one postprocessor and is maintained free for two years, including updates. In general, the digitizer and the digitizer interface board are purchased with the software package.

A version of this product is available for VAX computers.

Price: \$15,000 – \$31,500

Contact: Robert P. Whitten, President
(617) 655-6610

ALDEN COMPUTER SYSTEMS CORP.

27 Strathmore Road

Natick, MA 01760

ATOMS (Advanced Textile Operations Management Systems)

PDP-11 Operating System: RSX

Keywords: • Chemical • Inventory • Order processing
• Textiles/clothing

The ATOMS software provides order entry, inventory control, and billing capabilities for a textile dyeing and finishing plant. Printouts are available for dye orders, packing lists, invoices, and numerous order control reports. Since operation occurs in real time, the system tests data during input to ensure accuracy. Data that falls outside given limits must be verified before the system adds that data to a file.

Programs are accessed from system menus. Input is from a prompt that requests a given type of data to be keyed. English-language prompts use terminology that is common in the industry. Recovery procedures are provided to assist the operator in correcting input errors.

The dye and chemical subset of the ATOMS system provides a complete management information package to ensure optimum use and control of dyes and chemicals for textile dyeing and finishing operations. Printouts include dye and chemical formulation sheets, formulation costs, usage projection, dye and chemical inventory reports, and vendor lists.

Price: \$25,000 – \$35,000

Contact: Dickson Dorrier
(704) 394-7365

KEILTRONIX, INC.

7623 Frosch Road, P.O. Box 19023

Charlotte, NC 28219

AUTO-BOP

PDP-11 Operating System: RSX

Keywords: • Data collection • Inventory • Metals
• Process control

AUTO-BOP is a complete oxygen control system. Application functions contained in the AUTO-BOP package are charge design, alloy additions, optimum heat assignment, heat summary log, data communications, operating data analysis, programmable controllers, monitor and alarming, and terminal manager.

A version of this product is available for VAX computers.

Price: \$25,000 – \$50,000

Contact: David L. Schroeder
(412) 776-3130

PROCESS CORP.
163 Thorn Hill Road
Warrendale, PA 15086

AUTO-MET and Q-VAR

PDP-11 Operating System: RSX

Keywords: • Data collection • Electrical • Metals
• Process control

AUTO-MET Materials Management and Q-VAR Energy Management application packages for electric furnace control systems contain the following application functions: alloy-addition calculation with properties correlations, charge design, purchasing model, optimum heat assignment, heat summary log, pellet feed, power input control, bath temperature, power demand, secondary metallurgical process, inventory control, monitor and alarming, data communications, operating data analysis, programmable controllers, gas demand, and terminal manager.

A version of this product is available for VAX computers.

Price: \$50,000 - \$75,000

Contact: David L. Schroeder
(412) 776-3130

PROCESS CORP.
163 Thorn Hill Road
Warrendale, PA 15086

Automotive Release Accounting

PDP-11 Operating System: CTS-300, RT-11

PRO Operating System: RT-11

Keywords: • Accounting • Automotive • File transfer
• Materials handling

This program, written in DIBOL, automates the automotive supplier's release/shipping information with the automotive manufacturer. Releases are pulled from the automotive manufacturer's computer with autodial communications and placed on the supplier's computer. Advance shipping notices are prepared on the automotive supplier's computer and transmitted to the manufacturer's.

Key release accounting features include schedule reporting, release status inquiry, model-year processing, shipment reporting, bills of lading, invoices, and history inquiry.

The Release Accounting application is table driven, in compliance with A.I.A.G standards.

A version of this product is available for VAX computers.

Price: \$3000 - \$9000

Contact: David L. Ley
(313) 855-6181

RADLEY BUSINESS COMPUTERS

7071 Orchard Lake Road, Suite 305

W. Bloomfield, MI 48033

AWRAP (Wire Wrapping for GD Fully Automatic Machines)

PDP-11 Operating System: CTS-300, RSTS, RSX, RT-11

Keywords: • CAD/CAM • Electrical

AWRAP is an interactive program for the production of control media for the Gardner-Denver 14FV and 14FS automatic wire wrapping machines. The program, written in FORTRAN, is menu driven, so an individual needs no prior knowledge of computers or programming to achieve successful results. Data can be entered directly through the keyboard of the VDU when in the interactive mode, or the program can be interfaced to access data from a CAD-produced file.

The package also comprises a master file for the storage of geometric definitions of sockets and complete boards in constant use. The storing of standard board geometry in the master file and the format of data entry are compatible with the program WWRAP for semiautomatic wire wrapping machines.

Program features include powerful editing facilities; level assign; additional patterns; routing, using NOGO areas, channels, and routing points; manual and automatic pallet shift selected by the program; programmable dressing fingers; a plot of board geometry; a wrap count and wire length summary; a string list or from/to input; wire grouping and choice of wiring order; and inch/metric input and output.

A version of this product is available for VAX computers.

Price: £17,500

Contact: K. E. Cole

0905 53335

STAVELEY COMPUTING

Blackpole Road

Worcester WR3 8TH England

BASEWAY Software

PDP-11 Operating System: None required

Keywords: • Application development • Production control

• Shop floor control

BASEWAY software monitors and controls industrial control devices, such as programmable controllers and bar code readers. Through custom software applications, BASEWAY software can also accommodate robots, material-handling equipment, and NC machines. Those applications allow real-time access to information about the entire production process.

BASEWAY software integrates industrial controllers on the factory floor with manufacturing applications operating on the VAX host computer. BASEWAY software also provides one common user interface to the computer system network, applications, and shop floor devices. The

integration of BASEWAY software and manufacturing software applications provides increased productivity through prompt identification of problems, improved quality control, reduced scrap and rework, and expandability.

BASEWAY software consists of three software components:

- Shop Floor Gateway allows a PDP-11 processor to act as a front end for communicating with shop floor programmable devices. Working with the BASEWAY Application Bus, the gateway provides the communications interface to shop floor devices and off-loads the automatic data gathering and qualification processing from the VAX processor.
- BASEWAY Application Bus provides tools for the development and control of complex manufacturing applications requiring accurate, timely communication with shop floor devices. Applications that can be developed and controlled with the bus include inventory control, part tracking, and quality control.
- Programmable Device Support is a tool for managing shop floor devices and helps in maintaining accurate documentation for all supported devices. The programmable device access and support facilities of the BASEWAY application bus provide a common user interface to all of the supported programmable devices. Individuals can work from terminals connected to the system so that routine tasks, such as uploading and downloading, can be accomplished at a location remote from the plant floor.

Custom applications can be developed to address the specific manufacturing needs of each customer. Some typical applications include production monitoring, maintenance management, factory alarm annunciation, quality reports, and equipment cycle and maintenance reports.

Refer to SPD #14.85.xx, #26.66.xx, and #26.67.xx when requesting further information on BASEWAY software from your local DIGITAL sales office.

A version of this product is available for VAX computers.

Price: \$4000

Contact: Consult your local DIGITAL sales office (see Introduction).

Bill of Materials

PDP-11 Operating System: Micro/RSTS, Micro/RSX, RSTS, RSX

Keywords: • Bill of materials

This system, developed by MCBA/CSA, allows you to create and maintain parent/component relationships, add items to the item master file as part of the process of defining a product structure, and specify scrap/shrinkage. You can also print the single-level bill of materials and single-level where-used reports; the indented bill of materials and indented where-used reports, and the summarized bill of materials. You can use a same-as-except routine to create new product structures

based on those of similar items. This system interfaces to four other CSA packages.

A version of this product is available for VAX computers.

Price: \$2400 – \$2640

Contact: William Ferris
(203) 735-1819

COMPUTER SOFTWARE ASSOCIATES
366 Main Street, P.O. Box 492
Ansonia, CT 06401

BOMP (Bill of Material Processor), MCBA, Inc.

PDP-11 Operating System: CTS-300, Micro/RXS, RSTS, RT-11,
XENIX™

Keywords: • Bill of materials • Materials handling

BOMP allows full product structure maintenance and fast sort of the product structure file; provides for user-controlled product structure file reorganization; allows user-assigned sequence of components and permits specification of components' attaching operation; supports quantity for each parent to four decimals; permits specification of scrap/shrinkage; supports obsolete bills, forecasted/planning bills, and modular bills; prints/displays the single-level bill of materials, single-level where-used, indented bill of materials, indented where-used, and summarized bill of materials reports; interfaces to six other MCBA application packages; and supports security system and multicompny capabilities.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$3000 – \$4500

Contact: Sales Representative
(818) 957-2900

MCBA, INC.
2441 Honolulu Avenue
Montrose, CA 91020

C-11 Materials Management

PDP-11 Operating System: RSTS, RSX, RT-11, TSX-PLUS™

PRO Operating System: P/OS

Keywords: • Bill of materials • Materials handling
• Report writer • Scheduling

This comprehensive materials control application allows 10-level indented bills of material; prints a comprehensive audit trail of inventory movement; allows copying of the bill of material to a different assembly for faster data entry; allows what-if analysis and tracking of phantom assemblies for better management planning; allows extensive parameter selection and sorting on reports by work center ID, employee ID, work order number, and assembly and customer ID;

tracks work orders by status: new, exploded, issued, and finished; provides all the requirements to build the assemblies in the master schedule, based on the bill of material and inventory files; tracks an hourly overhead rate percentage, fixed overhead rate for a work order, variable overhead piece rate, and hourly labor rate; allows tracking of operation setup and run times; allows classification of an assembly as both a component and a finished good (for sale as spare parts); provides master schedule for all assemblies, including customer order information, start and finish dates, and unit price and cost; and more.

A required interface to C-11 Systems Inventory allows you to schedule and track all components from raw materials through subassemblies to finished goods. Many valuable reports help increase production efficiency and profitability.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$1500 - \$3000

Contact: Denis Peterson
(516) 483-3123

CBM ASSOCIATES, INC.

955 Front Street

Uniondale, NY 11553

C-DASS (Computer Distribution and Storage System)

PDP-11 Operating System: RSX

Keywords: • CAD/CAM • Numerical control
• Production control • Programming tools

This system stores part programs for a group of CNC machine tools and distributes those programs to individual machine tools. A terminal placed at each machine tool has access to the C-DASS and can transfer data between the C-DASS and the machine tool memories. Thus, program preparation, editing, and loading can be done from the individual terminals. With optional communication software, the entire system can be linked to a larger computer. As a further option, one can add management and control functions.

Price: \$20,000 - \$100,000

Contact: Robert P. Whitten
(617) 655-6610

ALDEN COMPUTER SYSTEMS CORP.

27 Strathmore Road

Natick, MA 01760

CAM-TECH

PDP-11 Operating System: Micro/RSX, RT-11

PRO Operating System: P/OS, RT-11

Keywords: • CAD/CAM • Engineering • Numerical control

Written in FORTRAN, this CAD/CAM programming system was developed for the sheet metal industry.

Price: \$19,000 - \$100,000 +

Contact: Arnie Colbert or Bruce Robinson
(813) 576-3734

TECHWARE COMPUTING CO.

9620 Executive Center Drive

St. Petersburg, FL 33702

CHEM-COST

PDP-11 Operating System: RT-11

Keywords: • Calculation aids • Chemical • Cost accounting
• Pharmaceutical

This complete menu-driven formula-processing system stores formulas for hundreds of chemical and pharmaceutical products with detailed cost calculations and mixing instructions. The system also prints batch work sheets with required quantities for all raw materials in a given formula.

The system allows you to enter, store, retrieve, and print formulas, quotes, and product cost sheets. Product cost sheets may be printed by product, customer, or affected component. The system automatically interfaces to inventory, work orders, invoicing, and purchasing. Thus, a change in any component automatically updates all affected products. Plus, an audit trail of all cost and price changes is provided.

Benefits of the system include a 75% reduction in the amount of data to be entered, a reduction of the time and labor needed for product costing, virtual elimination of transcription and calculation errors, up-to-date cost reports, and more.

The system is provided with installation, training, and ongoing hardware and software maintenance, as well as customization of special formulas and reports.

Price: \$3000

Contact: Les Palenik
(416) 298-9161

SHARED SYSTEMS SUPPORT LTD.

3251 Kennedy Road, Unit 5A

Scarborough, Ontario M1V 2J9 Canada

CIMCO Interactive APT (Automated Program Tools)

PDP-11 Operating System: RSX

Keywords: • Numerical control

This complete APT part programming system with graphics produces accurate, cost-effective tapes for all types of NC/CNC machine tools. The system features interactive processing and on-line error correction, graphics display of geometry and of cutter path and tool shape, storage and retrieval of geometric definitions, and examination of the standard CL file before postprocessing.

APT is a powerful, easy-to-learn English-like computer language designed to simplify tape preparation. APT offers all the advantages of an ANSI standard language and on-line error correction and graphics display of both geometry and tool motion.

An interactive processor, the IAPT system processes each statement as it is entered by the programmer. If the statement contains an error, IAPT outputs a diagnostic message immediately so that the programmer can make the necessary correction before continuing. As the programmer enters geometry definitions or cutter motion commands, IAPT draws the geometry or motion on the plotter for instant verification. Incorrect geometry or motion can also be changed before proceeding.

The Generalized Postprocessor program prompts users for information about their machine tools and then builds the postprocessors accordingly. The system can store an unlimited number of postprocessors for use with IAPT part programs. The Generalized Postprocessor helps keep overall system costs down and enables the user to customize software.

A lathe programming capability provides a convenient means of describing tool motion for typical lathe roughing and threading operations. Automatic stock-removal routines permit roughing bar stock or forgings to the most complex part geometry with only a few commands. A single-statement threading sequence simplifies programming of any threading requirements.

CIMCO distributors are located in Australia (Westfield Tower, Doncaster, Victoria 3108) and the United Kingdom (143 Bromsgrove Street, Birmingham B5 6RH).

Price: \$15,000 – \$25,000

Contact: Earl White

(214) 255-3124

COMPUTER INTEGRATED MANUFACTURING CO.

106 Decker Court, Suite 300

Irving, TX 75062

CMI PROFIT

PDP-11 Operating System: RSTS

Keywords: • Accounting • Distribution • MRP

CMI PROFIT is a complete, user-friendly, on-line, interactive closed-loop MRP II manufacturing system as described by APICS. The program, fully integrated with its own accounting/distribution system, is used by more than 350 firms in various manufacturing disciplines. The package features:

- Financial planning for budgeting, production planning, and sales forecasting
- Manufacturing planning for master scheduling, material requirements planning (regenerative or net change), capacity requirements planning, and rough-cut capacity planning

- Manufacturing control for work orders, labor reporting, material reporting, routings, and net material requirements
- Engineering control for single, multilevel, and same-as-except-for bill of materials and new-product estimating
- Inventory control (multilocation) for purchase order processing, inventory average costing, inventory analysis, and physical inventory
- Sales control for sales order processing, sales analysis, and customer service
- Manufacturing costing for work order costing and work order budget reporting
- Accounting control for customer billing, accounts receivable, accounts payable, payroll, and general ledger

A version of this product is available for VAX computers.

Price: \$20,000 – \$60,000

Contact: Ken F. Sellers, Jr.

(414) 327-7560

SYSTEMS FOR PROFIT INC.

10335 W. Oklahoma Avenue

Milwaukee, WI 53227

CMR21 Host Utility

PDP-11 Operating System: RSX

Keywords: • Networking • Software utilities
• Systems communications

This library of RSX-11/VMS utility programs assists users of CMR21 distributed industrial control processors in configuring and supporting networks of CMR21 units. This utility is not required to operate the CMR21. However, in applications that have many CMR21 processors distributed over a wide area, the utility provides a convenient set of nonprivileged executable tasks to determine network configuration and to access individual processors in the network.

The CMR21 Host Utility is compatible with VAX/VMS and PDP-11/RSX-11. The utility supports both mapped and unmapped memory configurations and is distributed in Files-11 format.

Refer to SPD #30.39.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

Concept Capacity Planning

PDP-11 Operating System: CTS-300, RSTS

Keywords: • Planning aids • Production control
• Shop floor control

This module enables the user to determine the forward load on work centers to infinite capacity. The module processes the work-in-progress

file and loads the standard times of uncompleted operations to their specified work centers.

A calendar file accommodates various shift working patterns, statutory holidays, shutdowns, and more. The user can forecast the day-by-day capacity of each work center for up to a year.

Each uncompleted work order is loaded, operation by operation, from its calculated latest start dates. That infinite-capacity loading process is apparent in a series of reports and screen inquiries.

The output shows the load, in percentage and hours, on each work center, with the suggested sequence of operations. The routing of each order is shown with its calculated start and finish times. A departmental load summary provides a week-by-week overview of loads and spare capacity.

Price: £800 – £2400

Contact: Nicola Nobes
(0276) 76303

CONCEPT COMPUTER SYSTEMS LTD.
Bagshot House, High Street
Bagshot, Surrey GU19 5AF England

Concept Data Base Control — Materials

PDP-11 Operating System: CTS-300, RSTS

Keywords: • Bill of materials • Planning aids
• Production control

Central to the entire Concept system, this module establishes a complete record of the makeup of a company's products. This module provides the bill-of-materials and where-used facilities essential to the materials planning, costing, estimating, and kitting elements of the full package.

The system provides on-line maintenance of a parts and product structure file. Inquiries and print-outs show single and multilevel breakdowns of assemblies and their components. Component usage can be traced up to finished-product level. A copy feature speeds up the creation of bills of materials similar to existing assemblies.

Obsolete and unreleased versions of an item and its bill of materials can be retained on file and accessed when required.

Price: £800 – £2400

Contact: Nicola Nobes
(0276) 76303

CONCEPT COMPUTER SYSTEMS LTD.
Bagshot House, High Street
Bagshot, Surrey GU19 5AE England

Concept Data Base Control — Operations**PDP-11 Operating System:** CTS-300, RSTS**Keywords:** • Planning aids • Production control

This module defines the resources available and the operations undertaken in the manufacturing process. The two files established — an operations file and a work center file — are essential to the labor-costing, work-in-progress control, and capacity-planning elements of Concept.

Each work center is defined by the number of machines and operatives available, the labor rates paid, and the shift pattern of the work center. Pay rates can be recorded for several labor grades to determine standard labor costs. Operations can show standard batch setting and job run times, as well as details of intermediate transit times, overlapping of operations, and more. A text area to describe the operation and a facility to nominate the stock used are also included.

Price: £800 – £2400**Contact:** Nicola Nobes
(0276) 76303**CONCEPT COMPUTER SYSTEMS LTD.**

Bagshot House, High Street

Bagshot, Surrey GU19 5AF England

Concept Inventory Management**PDP-11 Operating System:** CTS-300, RSTS**Keywords:** • Inventory • Production control

This system includes a comprehensive stock-movement recording facility and an audit trail that can be printed daily and consolidated over longer periods. A cyclic stock-checking system, a stock-evaluation report, and an ABC classification system that can help determine reorder policies are included.

Stock can be controlled by historical usage patterns or by future needs, as determined by the Material Requirements Planning module. The resulting requirements are available to Inventory Management for comparison with current and projected stock levels.

Control is triggered by reference to exception reports, the most important being reorder recommendations and reports of excess and obsolete stock.

Price: £800 – £2400**Contact:** Nicola Nobes
(0276) 76303**CONCEPT COMPUTER SYSTEMS LTD.**

Bagshot House, High Street

Bagshot, Surrey GU19 5AF England

Concept Material Requirements Planning

PDP-11 Operating System: CTS-300, RSTS

Keywords: • Bill of materials • Inventory • MRP
• Production control

This MRP module allows the user to determine assembly, component, and material requirements, using a current order book, a system-generated forecast, or an input production plan. The system also creates a master schedule to submit to the MRP process. The master schedule can accept demand up to a user-determined horizon.

MRP uses the product-structure links maintained in the Data Base Control module to locate the bills of material related to products in demand. A level-by-level explosion is then performed that allows for production and purchasing lead times. The requirements at each level of the product structure are calculated after allowance has been made for stocks, work in progress, allocations, and such factors as safety levels and scrap rates.

Inquiries show details of forward requirements calculated by the MRP system. Those results are stored on the parts file and are available to the Inventory Management module.

Price: £800 – £2400

Contact: Nicola Nobes
(0276) 76303

CONCEPT COMPUTER SYSTEMS LTD.

Bagshot House, High Street,
Bagshot, Surrey GU19 5AF England

Concept Product Costing — Materials

PDP-11 Operating System: CTS-300, RSTS

Keywords: • Cost accounting • Production control

Material costs are supplied to this module by the Purchase Order Control system or can be input through the keyboard. The system stores elements of unit cost, including standard and current material, labor, and overhead costs. Spare what-if cost fields are available for simulation.

At the center of the module, a cost build-up facility uses the bill of materials where-used links to accumulate material costs up to the finished-product level. The system includes inquiries, a range of cost reports, and facilities for selectively applying inflation factors and for calculating selling prices.

Price: £800 – £2400

Contact: Nicola Nobes
(0276) 76303

CONCEPT COMPUTER SYSTEMS LTD.

Bagshot House, High Street
Bagshot, Surrey GU19 5AF England

Concept Product Costing — Operations

PDP-11 Operating System: CTS-300, RSTS

Keywords: • Cost accounting • Production control

This module determines component, assembly, and finished-item labor costs, using operation times and pay rates established in the Data Base Control — Operations system. The module is closely linked to the materials costing system and thus incorporates labor cost build-up and reporting facilities. An overhead calculation is included, and labor costs can be recalculated when new pay rates are negotiated.

Price: £800 — £2400

Contact: Nicola Nobes
(0276) 76303

CONCEPT COMPUTER SYSTEMS LTD.
Bagshot House, High Street
Bagshot, Surrey GU19 5AF England

Concept Purchase Order Control

PDP-11 Operating System: CTS-300, RSTS

Keywords: • Production control • Purchasing

This purchasing module accepts new-order details, prints official purchase orders, and maintains an up-to-date record of outstanding orders for inquiry and reporting. The data is accessed by the Inventory Management and Material Requirements Planning modules and can supply the latest prices to the materials-costing function.

Goods-received transactions immediately update stock and on-order balances, and a printed GRN slip is available. A complete buying history is maintained, and the system includes a chase facility and order book analysis for cash-flow calculations. The system can handle non-stock items and services, and multiline orders consisting of scheduled call-offs can be entered into the system.

Price: £800 — £2400

Contact: Nicola Nobes
(0276) 76303

CONCEPT COMPUTER SYSTEMS LTD.
Bagshot House, High Street
Bagshot, Surrey GU19 5AF England

Concept Works Order Control — Materials

PDP-11 Operating System: CTS-300, RSTS

Keywords: • Materials handling • Production control
• Shop floor control

This module maintains the status of materials and components for internal work orders. Each work order record includes batch quantity and due-date information, with details of the components derived automatically from the bill of materials, which can specify a nonstandard build.

Each material record holds required, allocated, awaiting-issue, and issued balances, thus allowing shortages to be tracked. Orders can be processed individually through the trial kitting process. Alternatively, batches of orders can be processed, with kitting lists automatically showing precise quantities to be issued. A keystroke confirms the issue of a completed order and updates stock and work-in-progress records.

Completed orders or individual items can be returned to stock and deallocated, thus freeing those items for higher-priority orders. Shortages in the original order are automatically signaled, and a back orders—available report indicates the receipt in stock of goods needed in live production orders.

Price: £800 – £2400

Contact: Nicola Nobes
(0276) 76303

CONCEPT COMPUTER SYSTEMS LTD.

Bagshot House, High Street

Bagshot, Surrey GU19 5AF England

Concept Works Order Control — Operations

PDP-11 Operating System: CTS-300, RSTS

Keywords: • Production control • Project management
• Shop floor control

This work-in-progress system is based on a comprehensive works order file containing details of material and component issues, as well as labor and machine operations. Operation details are derived from the operations master file established in Data Base Control — Operations, with standard set-up and batch run times calculated automatically. The module includes a routing card print facility and a detailed evaluation of uncompleted production in work in progress.

Work in progress can be rerouted to alternative work centers, and standard times can be adjusted. Work-in-progress records are kept up to date by the entry of operation completion data, such as quantities and elapsed times. Inquiries therefore show the exact order status, such as standard and actual times, partial completions, unstarted operations, scrapped production, and more.

Price: £800 – £2400

Contact: Nicola Nobes
(0276) 76303

CONCEPT COMPUTER SYSTEMS LTD.

Bagshot House, High Street

Bagshot, Surrey GU19 5AF England

COP (Customer Order Processing), MCBA, Inc.

PDP-11 Operating System: CTS-300, Micro/RXS, RSTS, RT-11,
XENIX™

Keywords: • Billing • Distribution • Order processing
• Warehousing

COP provides 2-pass customer order entry with separate billing, integrates with MCBA's manufacturing system, and has features for distributors. COP allows on-line entry and editing of customer orders or credit memos, allocates line items at entry time, checks credit and availability at entry time, accepts order and line-item discounts at entry time, handles back orders automatically, supports distribution from multiple warehouse locations, allows selective and partial billing, supports a 10-character zip code, accepts multiple prices for each line item and mass price change, and allows product category account maintenance.

In addition, COP collects sales history automatically and prints sales history reports on request, as well as the Products Sold by Customer and Customers by Products Sold reports. COP accepts multiple discounts for each customer on a product-line basis, as well as trade discounts for each product; interfaces to five other MCBA application packages; and supports security system and multicompartment capabilities.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$3000 - \$4500

Contact: Sales Representative
(818) 957-2900

MCBA, INC.
2441 Honolulu Avenue
Montrose, CA 91020

CPCS-I (WECON Computer Process Control System)

PDP-11 Operating System: RSX

Keywords: • Chemical • Petroleum • Process control

This complete process control/SCADA system features fill-in-the-blanks definition, a block-oriented control language, data acquisition, alarming, historical data collection, averaging, AGA-3 flow compensation, steam tables, exact screen-image hard copy, interactive flow graphics, a color-display builder, and a batch-control package. CPCS-I is limited to 1000 blocks. It is written in FORTRAN and limited to DIGITAL equipment under the RSX-11M-PLUS operating system.

Price: \$5000 - \$15,000

Contact: J. L. Fuentes
(713) 499-7575

WECON PROCESS SYSTEMS INC.
10435 Greenbough, Suite 300
Stafford, TX 77477

DECtap Manufacturing System

PDP-11 Operating System: None required

Keywords: • Disk utilities • Menu handlers • Report writer
• Security

The DECtap Manufacturing System is a group of multiuser business data processing software modules for the discrete build-to-order manufacturer. The required DECtap Base System provides utilities and file architecture support for Inventory Management, Order Management, Product Data Management, and Shop Control and Costing systems. DECtap Manufacturing can be installed with other DECtap modules: Accounts Payable, Accounts Receivable, Fixed Assets, General Ledger, Inventory Control, Order Processing, Payroll, Purchase Order Control, and Sales Analysis. (Refer to SPD #14.32.xx for detailed descriptions of these DECtap modules.)

DECtap offers a means of adapting certain aspects of the software to meet specific user requirements through an easy-to-use interactive tailoring facility. The tailoring process involves answering questions about the customer's business operations.

Refer to SPD #14.84.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1500 - \$2000

Contact: Consult your local DIGITAL sales office (see Introduction).

DNC-11 (Direct Numerical Control Package)

PDP-11 Operating System: RSX

Keywords: • CAD/CAM • Materials handling
• Numerical control • Shop floor control

DNC-11, a part program distribution system for the manufacturing market, provides a direct link between the CAD/CAM environment and numerically controlled (NC/CNC) machines on the shop floor. DNC-11 eliminates generating NC programs on paper tapes that are then manually transported to the NC/CNC machine level. The result is faster design to production and elimination of most problems encountered with paper tapes.

The system runs under RSX-11M and VMS and can comprise two or three levels:

- **Host system:** For part program storage, command interpretation, logging, communication with remote mainframes, and optionally for CAD/CAM or program development.
- **Subsystem:** For program distribution; in smaller applications, this software can run on the host system.
- **Machine connection level:** Three methods are possible.

BTR technique (Behind Tape Reader): The paper tape reader on the NC/CNC machine is replaced by a microprocessor-based BTR interface available from DIGITAL. Firmware emulates the tape reader to control the machine. Connection is by means of an optically isolated parallel port and uses an error-free communication protocol.

CTE terminal: Based on the VT103 or RT103, this terminal provides for local storage and editing of part programs as well as machine feeding control. Connection is through a serial line to the BTR interface.

Direct communication: For CNC machines that have an error-free protocol implemented.

A version of this product is available for VAX computers.

Price: \$15,000

Contact: Consult your local European DIGITAL sales office or call 49-89-95910.

DOVETAIL JOM (Job-Oriented Manufacturer)

PDP-11 Operating System: RSTS

Keywords: • Accounting • Cost accounting • Inventory
• Purchasing

JOM provides complete control and reporting of charges in a job-oriented manufacturing environment. DOVETAIL systems comprise a variety of modules sharing common procedures to access a common data base. All modules are accessed by an integrated menu offering on-line help for each option. All modules are controlled by tables allowing the system administrator to define new job types, commodity types, buyers, and so on without programming. Thus, each system can be custom tailored with off-the-shelf software. The modules include Inventory Control, Factory Purchasing, and Query, which links all the modules, allowing you to quickly check usage, transaction history, engineering notes, open orders, and storeroom locations for any part.

A version of this product is available for VAX computers.

Price: \$16,000 - \$23,500

Contact: Thomas Considine
(617) 484-6814

CONSIDINE DIGITAL SYSTEMS
490 Trapelo Road
Belmont, MA 02178

DOVETAIL MRP (Materials Requirement Planner)

PDP-11 Operating System: RSTS

Keywords: • MRP • Production control • Purchasing
• Scheduling

MRP takes up where the DOVETAIL JOM (Job-Oriented Manufacturer) leaves off. Building on the firm basis of inventory control, job tracking, and vendor performance history established under JOM, MRP allows you to schedule and control materials requirements from bid to manufacture to postsales service. DOVETAIL systems comprise a variety of modules sharing common procedures to access a common data base. All modules are accessed by an integrated menu offering on-line help for each option. All modules are controlled by tables allowing

1002 Manufacturing

the system administrator to tune data processing without programming. Thus, each system can be custom tailored with off-the-shelf software. The Bill of Materials system (BOM) lets you enter bids onto the system, using live inventory information. As projects are approved, the Materials Requirements System (MRS) releases BOMs to Inventory Control as scheduled requirements. MRS controls allocation of scarce resources by high priority and long-term jobs while projecting requirements, thereby facilitating planned and cost-effective purchasing.

DOVETAIL Job-Oriented Manufacturer establishes the broad data base and strong control required by MRP. All data and procedures are fully compatible with DOVETAIL Wholesale Distributor. As you grow into MRP, all requirements, work orders, and scheduling are added to the usage, transaction history, open orders, and engineering information already available in the DOVETAIL Job-Oriented Manufacturer's powerful Query.

A version of this product is available for VAX computers.

Price: \$28,000

Contact: Thomas Considine

(617) 484-6814

CONSIDINE DIGITAL SYSTEMS

490 Trapelo Road

Belmont, MA 02178

DPM (Dyeing Process Management)

PDP-11 Operating System: RSX

Keywords: • Data collection • Materials handling
• Process control • Textiles/clothing

DPM provides centralized monitoring and control capabilities over the independent microprocessor machine controllers. The Keiltronix microprocessor controllers feature stand-alone control capabilities; functions provided by the DPM programs include monitoring, centralized scheduling, and management reporting for the entire operation.

This software package operates on the RSX-11M multiuser, multitasking operating system. DPM is menu driven and provides for error detection and recovery routines.

Master copies of dyeing procedures are stored in the DPM files. These host computer procedure files can be down-line loaded to microprocessor machine controllers. This feature also allows customization to optimize process parameters for individual products. You can modify, add, delete, display, and print procedures on the host file. Procedures in the host system and individual microprocessor memories can be listed on request. Prescheduling capabilities are also available. An automatic procedure lookup identifies procedures used in the past. The dyer can choose whether to use the computer-selected procedures or to enter alternatives. The master schedule for all machines can be printed on

request. The operational status of one or all machines can be displayed on a video terminal.

A lot summary report is automatically generated to summarize significant events that occurred during the execution of the programmed procedure. A real-time alarm-logging program provides a real-time readout to alert management personnel of abnormal machine conditions. Typical alarm messages include pump stopped, low bath level, communications failure, and temperature-off limits. Reports are available to pinpoint problem areas associated with equipment, personnel, and procedures. Data can be sorted by shift, machine, or individual batches on a current day or week basis.

Price: \$10,000 - \$20,000

Contact: Dickson Dorrier
(704) 394-7365

KEILTRONIX, INC.

7623 Frosch Road, P.O. Box 19023
Charlotte, NC 28219

EQUINOX™

PDP-11 Operating System: RSX, RT-11

Keywords: • CAD/CAM • Graphics • Menu handlers

This computer-aided drafting software combines the simplicity of computer graphics with powerful drafting features. Drawings can be quickly created, stored, recalled, and edited. A unique menu approach guides the user through logical sequences to create geometry and to perform other visual operations such as in-process drawings, set-up sheets, and tooling sheets. Dimensions are automatically drawn with arrowheads and text, showing precise measurement between selected drawing elements. Other key features include layering and cross-hatching. Commonly used shapes can be defined once and used in multiple drawings.

The system also offers a menu-driven NC graphics package. Users may incorporate their own machining methods or allow EQUINOX to apply efficient techniques. The package features automatic routines such as lathe roughing, lathe grooving, mill contouring optimization, and clamp avoidance. Users may view the in-process parts of machine-tool coordinate systems through machining simulation. NC graphics is compatible with COMPACT II, which allows the program to interface with other CAD systems; enables COMPACT II programs to be read into the EQUINOX systems; and allows graphics to be used efficiently and transported.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Thomas J. Schaefer, Director of Marketing
(313) 995-6000

MANUFACTURING DATA SYSTEMS INC.
4251 Plymouth Road, P.O. Box 986
Ann Arbor, MI 48106

FINCON (Financial Control System)

PDP-11 Operating System: RSTS, RSX

Keywords: • Accounting • Inventory • Order processing
• Real time

FINCON is a real-time system designed to be fully integrated into any of the modules of IMPCON (Production Control/Manufacturing), if desired. FINCON contains sales, purchase, and nominal ledgers, as well as optional sales order entry and stock control modules. FINCON can be installed on a modular basis. Additionally, interfacing to PAYSOLVE (Payroll) will be available.

A version of this product is available for VAX computers.

Price: £3000 - £16,000

Contact: M. J. Bradley
0905 53335

STAVELEY COMPUTING
Blackpole Road
Worcester WR3 8TH England

FMRP (Full Material Requirements Planning)

PDP-11 Operating System: CTS-300, RSTS, RT-11, TSX-PLUS™

Keywords: • MRP • Planning aids

This MCBA system provides all the features of Base MRP, highlights exceptions, recommends shop order releases, supports multiple-order policies, provides pegging, recommends purchase order releases, accommodates what-if operations, and is the key to successfully implementing manufacturing resource planning.

Application Development and Enhancements, Inc., is a New England distributor of software products manufactured by Mini-Computer Business Applications, Inc. (MCBA), in Montrose, California.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$2000 - \$6000

Contact: Roger O'Connor
(617) 938-1979

APPLICATION DEVELOPMENT AND
ENHANCEMENTS, INC.
29-B Montvale Avenue
Woburn, MA 01801

G-Post (Generalized Postprocessor)**PDP-11 Operating System:** RSX**Keywords:** • CIM • Numerical control
• Pre- and postprocessors

G-POST provides machine shops with standard, fixed-cost alternatives to customer software, eliminating the expense and lead time required for custom postprocessors. This postprocessor supports almost any 2-, 3-, or 4-axis machine/control configuration — without additional software or programming. G-Post also interfaces directly with most leading CAD/CAM vendor CL data file output.

By interacting with the option generator, you can create as many option files as needed. Once stored, the option file never needs to be created again for that particular machine/control combination.

You can normally create option files in 30 minutes and can produce usable tape immediately. If the machine tool or control builder changes the CNC executive load instructions, you can immediately compensate by rerunning the option file generator. You can add new machines by running the interactive option file generator, then storing the option file with a new machine number reference.

A version of this product is available for VAX computers.

Price: \$10,000 – \$20,000**Contact:** Earl White
(214) 255-3124

COMPUTER INTEGRATED MANUFACTURING CO.
106 Decker Court, Suite 300
Irving, TX 75062

H-BOMM**PDP-11 Operating System:** ULTRIX-11, XENIX™**Keywords:** • Decision support • Forecasting • Management

Helmsman's bills of material management system provides a product structure management tool for planning, control, and decision making. Its features and spreadsheet capabilities make H-BOMM the ideal what-if planning tool. H-BOMM integrates with other Helmsman products to form a material requirements planning package, H-MRP. As the nucleus of Helmsman's material requirements planning system, H-BOMM supports a complete and classic demand-dependent MRP system, a system for small manufacturers.

As a desk-top computer tool linked to a large-scale computer, H-BOMM can receive and operate on portions of a company's product structure data base. H-BOMM users can perform complex operations not available on a large computer system, and no programming skills are required.

Operating on a micro, H-BOMM exceeds the features and functions of mainframe and minicomputer software. With the support of

H-CHAMP and operating in a work station connected with a main-frame, H-BOMM is the manufacturing and engineering manager's equivalent of the financial manager's spreadsheet tool.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$2495

Contact: Lew Silverstein

(408) 246-8300

HELMSMAN SYSTEMS, INC.

1030 S. Winchester, Suite 205

San Jose, CA 95128

H-BUY

PDP-11 Operating System: ULTRIX-11, XENIX™

Keywords: • Order processing • Process control • Purchasing
• Quality control

H-BUY, an on-line interactive system, provides purchasing and receiving management for manufacturing operations. H-BUY integrates with other Helmsman products to form a material requirements planning package, H-MRP.

H-BUY's Purchasing function group enters, tracks, and controls open purchase orders and provides on-line status and historical information. Reducing the buyer's clerical effort allows more time to control the cost and adverse variance of material and to evaluate the delivery performance of the vendor. By treating purchased material as "good parts on hand" only when it has passed inspection and is in Stores, the Purchasing group more accurately monitors the arrival and quality of vendor items. A user-controlled report generator is included in the function group.

The Vendor function group establishes and controls the vendor-to-part relationship. By tracking the vendor's history and commitments, the group of programs establishes which vendors best meet an organization's needs.

A well-run Receiving function controls vendors more efficiently, regulates the flow of material, and raises the level of service.

The Receiving function group tracks and controls material and provides on-line status and historical information. By matching purchase order and receiving information, the system ensures payment only for good material in the specified quantity. Because the system flags back-ordered material, expedition begins as soon as needed material arrives.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$2495

Contact: Lew Silverstein
(408) 246-8300

HELMSMAN SYSTEMS, INC.

1030 S. Winchester, Suite 205

San Jose, CA 95128

H-MAKE

PDP-11 Operating System: ULTRIX-11, XENIX™

Keywords: • Process control • Production control
• Project management • Shop floor control

This on-line interactive system provides work-in-process management for manufacturing operations. H-MAKE integrates with other Helmsman products to form a material requirements planning package, H-MRP.

Work-in-process tracking is the cornerstone of closed-loop MRP. H-MAKE allows production and production control to make the decisions, to set the priorities, and to meet the order schedules. Reliable, consistent performance directly influences lower investment in finished goods inventory and better customer service.

The Work Order function group enters, tracks, and updates work orders; provides on-line work-in-process status information; and includes a user-controlled report generator, tied to work order number or part number. Paperwork packets including kit pull lists are generated for each job. The system ties back-order item detail to work order and makes the information available on line. Delays and splits are possible. Work orders are tied to and controlled by due date.

The Work Center and Route function groups establish and update work center and routing information. The Route group provides a report generator that ties work center to work order information. Those reports give the shop supervisor an information base for close-in scheduling and dispatching.

Flexible, quick-reacting production control planning requires you to perform what-if simulated kit pulls. The Kitting function group has two what-if simulated kit pull tools that let you answer the question "Can this kit or set of kits be pulled now?"

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$1495

Contact: Lew Silverstein
(408) 246-8300

HELMSMAN SYSTEMS, INC.

1030 S. Winchester, Suite 205

San Jose, CA 95128

H-MRP

PDP-11 Operating System: ULTRIX-11, XENIX™

Keywords: • Bill of materials • Inventory • Purchasing
• Shop floor control

H-MRP, a material requirements planning package, incorporates the classic MRP concepts. H-MRP is an on-line, demand-dependent, transaction-driven, net-change system. The H-MRP package includes H-CHAMP, applications environment; H-BOMM, bills of material manager; H-STORE, inventory management and stores; H-MAKE, work-in-process management; H-BUY, purchasing and receiving; H-PLAN/M, master schedule and planner controls; and MRP.

H-MRP integrates with other suppliers' application software packages supporting the needs of manufacturing company users. For instance, the H-CHAMP tools can be used to integrate the H-MRP modules with presently installed accounting or sales and forecasting packages.

H-MRP runs on the de facto standard operating systems for 8080/8085/Z80, 8086/8088, Z8000, and 68000 families of hardware.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$9995

Contact: Lew Silverstein

(408) 246-8300

HELMSMAN SYSTEMS, INC.

1030 S. Winchester, Suite 205

San Jose, CA 95128

H-PLAN/M

PDP-11 Operating System: ULTRIX-11, XENIX™

Keywords: • MRP • Planning aids • Scheduling

H-PLAN/M is an on-line interactive system providing master schedule and planner controls and MRP for manufacturing operations. The system integrates with other Helmsman products to form a material requirements planning package, H-MRP.

The Material Requirements Planning function group provides the time-phased, net requirements for each item; the group compares independent demand from the master schedule and dependent demand from the BOM explosion to the on-hand inventories and open purchase and work order status. This group also enables you to control MRP rules. Choose between regenerative or true transaction-driven net change rules. An on-line MRP inquiry initiates a single-level MRP updated display for that item for current information. The MRP is "full-pegging." The MRP function group also includes what-if simulation, a powerful tool for making management decisions.

The Master Schedule affects customer-order service and inventory-investment levels. This group drives the MRP System with product

requirements by date, quantity, and configuration. The group compares forecast and sales order information to the production plan and recommends where to adjust the master schedule. Included is a rapid-response, rough-cut capacity planning tool, in addition to top-down, what-if simulation.

The Planner Control function group enhances system effectiveness by apportioning and delegating system activities to designated individuals. This group enables you to control all aspects of the inventory rules that affect each of the parts in the system data base. You can choose order point or MRP control, internal and safety lead time, safety stock, and order quantity rules. The group includes an extensive user-controlled report generator.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$2495

Contact: Lew Silverstein
(408) 246-8300

HELMSMAN SYSTEMS, INC.
1030 S. Winchester, Suite 205
San Jose, CA 95128

H-STORE

PDP-11 Operating System: ULTRIX-11

Keywords: • Distribution • Inventory

H-STORE, an on-line interactive system, provides inventory and stores management for manufacturing operations. The system integrates with other Helmsman products to form a material requirements planning package, H-MRP.

The Stores group provides a perpetual on-line inventory record, maintained by inventory personnel. You can trace data base transactions to the source document and to the responsible operator. The system includes a user-controlled report generator.

The Charge Number and Month-End function groups provide inventory and WIP transaction interfaces to the financial and accounting functions. The groups also detail and summarize the current month's system transactions. The references to source documents and operators help management review and edit that information before transferring it to the general ledger accounts. Dual tracking and a user-controlled report generator are included.

The Back-Order function group tracks and reports back-order status and issues and includes a user-controlled report generator. By flagging relevant inquiries and reports, the system helps to expedite back orders, both at the vendor's plant and in house.

The Cycle Count function group statistically measures Stores' accuracy and continually adjusts physical-to-book inventory.

1010 Manufacturing

The Physical Inventory function group controls the source documents for the classic, audited, and physical inventories and processes the approved physical-to-book inventory adjustments that follow.

The Planner Control group provides history-oriented inventory control, item classification, lot size, EOQ, safety stock, and order point. Those functions do not depend on bills of material or material requirements planning. The function group also includes a user-controlled report generator.

A version of this product is available for VAX computers.

Price: \$2495

Contact: Lew Silverstein
(408) 246-8300

HELMSMAN SYSTEMS, INC.
1030 S. Winchester, Suite 205
San Jose, CA 95128

HOST-AGV (Host-Automated Guided Vehicles)

PDP-11 Operating System: RT-11

Keywords: • Materials handling • Robotics • Shop floor control
• Warehousing

This Host Controller for warehouses, manufacturers, or other users of Automated Guided Vehicles (AGVs) allows a human dispatcher to direct multiple AGVs to or from pick-up/delivery stations by using simple English-like commands. The software can be interfaced to a higher-level host computer as a cell- or area-controller in a factory-automation hierarchy. The system produces a periodic transaction report, detailing AGV activity for the selected period, as well as other data reports. Modular in design, the software is configured on delivery to accommodate the user's specific AGV command and protocol structure.

Price: \$15,000 - \$30,000

Contact: D. Richard Schafer
(413) 527-7311

HILLTOWN COMPUTER ASSOCIATES, INC.
5 Hannum Brook Drive, P.O. Box 1079
Easthampton, MA 01027

I/M (Inventory Management), MCBA, Inc.

PDP-11 Operating System: CTS-300, Micro/RXS, RSTS, RT-11,
XENIX™

Keywords: • Distribution • Inventory

This comprehensive stand-alone inventory management tool is applicable to both manufacturing and distribution inventories. The application allows multiple inventory locations, stocked and nonstocked items, warehouse transfers and issues and receipts, and purchase

order entry, editing, and tracking; provides physical inventory tag support and cycle counting support; interfaces to seven other MCBA application packages; and supports security system and multicompartment capabilities. I/M also prints the ABC Analysis Report, with optional update; the Usage Exceptions Report; and the Inventory Stock Status and Reordering Advice reports.

The user can clear item month-to-date fields and recalculate several averaged fields, clear item month-to-date fields only, clear item year-to-date fields, or evaluate LIFO inventory and cost rollover.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$3000 - \$4500

Contact: Sales Representative

(818) 957-2900

MCBA, INC.

2441 Honolulu Avenue

Montrose, CA 91029

IMCS (Interactive Manufacturing Control Systems)

PDP-11 Operating System: Micro/RSTS, Micro/RXS, RSTS, RSX

Keywords: • Inventory • MRP • Planning aids

• Shop floor control

This interactive manufacturing control system offers status, planning, and inventory control information. IMCS consists of six integrated systems:

- Interactive Inventory Management System maintains information on inventory, manufacturing orders, purchase orders, and material allocations.
- Interactive Manufacturing Standards System supports the creation, maintenance, and reporting requirements for bills of material and routings.
- Interactive Material Requirements Planning System explodes the master schedule into its component requirements and calculates net available inventory and open orders.
- Interactive Shop Floor Control System gathers information for control of work flow over a short period of time.
- Interactive Purchasing System provides the control for purchasing, receiving, and inspection, as well as the interface to the accounts payable system.
- Interactive Capacity Planning System provides a planning facility for long-range capacity needs.

A version of this product is available for VAX computers.

Price: \$30,000 +

Contact: Kim Sheridan

(602) 323-1813

INTERACTIVE INFORMATION SYSTEMS, INC.
505 N. Alvernon Way, Suite 102
Tucson, AZ 85711

IMPCON (Inventory Management and Production Control System)

PDP-11 Operating System: RSTS, RSX

Keywords: • Accounting • Distribution • General ledger
• Shop floor control

This powerful, fully integrated manufacturing and financial accounting system addresses component data and inventory management, purchasing control, bills of material, work order control, shop floor control, manufacturing cost control, MRP, sales order processing, general ledger, and accounts payable and receivable. The system can be installed in a variety of subsystems to suit particular application needs. A real-time interactive product, IMPCON is easily implemented and operated by user departments and is supported by comprehensive documentation and training courses. IMPCON subsystems enable manufacturing and financial accounting implementations to be made as either stand-alone or integrated systems.

IMPCON's "closed loop" design means that all stages of operation are fully integrated. The entire system responds immediately to every event, allowing each function to be performed in accordance with its relationship to every other function.

The implementation of IMPCON can lead to significant improvements in overall management capability. With an effective control system preventing bottlenecks and shortages, management skills normally preoccupied with day-to-day problems are freed for more profitable objectives, such as accurate planning and sound business forecasting. Reports, summaries, and projections are available at any time and are based on accurate, current data.

The software is written in COBOL and uses the RMS file accessing system, providing full compatibility with DATATRIEVE.

A version of this product is available for VAX computers.

Price: \$16,000 - \$100,000

Contact: Trevor J. Ogle
(617) 460-0330

COMPUTER SYSTEMS DEVELOPMENT (CSD) INC. OF
MASS.

910 Boston Post Road, Wayside Professional Building
Marlborough, MA 01752

Integrated Manufacturing and Financial System, Version 4.0

PDP-11 Operating System: RSX

PRO Operating System: XENIX™

Keywords: • Information management • MRP
• Order processing • Planning aids

This system for manufacturers that build or ship to customer order can accommodate varied manufacturing procedures and products. Some manufacturers build partially to stock and others only for the job. Production can be based on a mix of customer forecast and backlog orders. Products can range from metalworking through electronics to parts, equipment, and much more. The system includes order entry/invoicing, quotations, bills of material/routing, inventory/purchasing, job cost/estimating, production planning, shop floor control, material requirements planning, tool crib inventory, factory data collection, all financials, and a communications system. Applications can be run individually or integrated as a complete system. The system is fully supported with consulting demonstrations, training, warranty, documentation, telephone support, a continuing maintenance agreement, and dial-in support.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$500 – \$2500

Contact: Arthur Martin, President
(203) 677-6563

COMPUTER COVENANT CORP.
Integrated Manufacturing Systems
790 Farmington Avenue
Farmington, CT 06032

INVENT: Inventory for Manufacturing Companies

PDP-11 Operating System: Micro/RSTS, RSTS, RT-11

Keywords: • Inventory • Materials handling

These inventory programs for manufacturing companies can handle up to 10,000 types of parts. The user programs, accessed through a master program called INVENT, are especially well suited for job shop manufacturers.

Options include adding, looking up, and deleting parts; adjusting quantities; and correcting items. The programs can print inventory, inventory value, inventory labels, and reorder reports; and complete inventory listings, which include part number and description, quantity on hand, reorder point and quantity, estimated annual use, unit cost, vendor number, and date of last use.

Additional features include automatic computation of estimated annual usage and automatic computation of the lower of cost or average for tax purposes. The system even produces an inventory audit trail for a cross-check of entries.

PACKET, a bill of materials package, works with the inventory system.

All programs are written in BASIC. A user's manual is included with the system. On-site support is available.

1014 Manufacturing

Price: \$985

Contact: Raymond H. Green, President
(813) 360-1967

RAY GREEN AND ASSOCIATES

603 55th Avenue

St. Petersburg Beach, FL 33706

Inventory Control

PDP-11 Operating System: RSX

Keywords: • Accounting • Distribution • Inventory
• Materials handling

This inventory control module can be operated as part of the integrated Business Information System to track material from production forecast through purchasing, receiving, incoming test and inspection, multiple stockrooms, multiple stages of work in process, test and inspection, finished products, and shipment to customers. The module can be integrated to one or more other Breuer & Co. modules — Purchasing, Sales Order Processing, Bill of Materials, Job Cost Accounting, and General Ledger. Alternatively, the module can be operated independently of other software.

Integrated with Bill of Materials, the module's production forecast capability can generate purchase requisitions. Reports include inventory status, stockout/pending shortages, material requirements based on production forecast, product commitments based on customer sales orders, receiving and on-order reports, inventory valuation, shipping reports, and transaction reports with receipts, issues, transfers, adjustments, and so on.

A version of this product is available for VAX computers.

Price: \$6000

Contact: Janna McMillan
(617) 275-5810

BREUER & CO.

54 Middlesex Turnpike

Bedford, MA 01730

Inventory Management

PDP-11 Operating System: Micro/RSTS, Micro/RSX, RSTS, RSX

Keywords: • Distribution • Inventory • Warehousing

This system supports multiple inventory locations; provides for an extended item description of up to 480 characters; allows costing on a standard cost, average cost, or LIFO basis; provides the ability to allocate inventory; allows on-order information to be entered and tracked; processes stock transactions and transfers; provides for either on-line or batch updating of inventory; provides an on-line inquiry into the availability of an item, with the ability to inquire into the detail of an item's allocation; stores inventory transaction history and provides reports and inquiries into history; produces reorder advisory and stock

status reports; and allows for the processing of physical inventory counts. This software interfaces to seven other CSA packages

A version of this product is available for VAX computers.

Price: \$3200 - \$3520

Contact: William Ferris
(203) 735-1819

COMPUTER SOFTWARE ASSOCIATES
366 Main Street, P.O. Box 492
Ansonia, CT 06401

J/C (Job Costing), MCBA, Inc.

PDP-11 Operating System: CTS-300, Micro/RXS, RSTS, RT-11,
XENIX™

Keywords: • Cost accounting

This complete job costing system provides accurate cost reporting and comprehensive variance analysis. J/C includes interactive entry and editing of labor and material tickets. J/C supports standards or estimates for variance analysis, allocates fixed and variable overhead, provides security and multicompany support, and interfaces to five other MCBA packages. This package also prints a job cost analysis report by job, department, work center part and operation and a variance analysis report that includes rate, yield, performance, and quantity breakdowns for labor, material, and subcontracting.

Special J/C features are job copy, job cost master file, general ledger interface, accounts payable interface, and cost table defaults maintenance.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$2500 - \$4000

Contact: Sales Representative
(818) 957-2900

MCBA, INC.
2441 Honolulu Avenue
Montrose, CA 91020

Job Costing

PDP-11 Operating System: Micro/RSTS, Micro/RXS, RSTS, RSX

Keywords: • Cost accounting • Inventory • Production control

This system, developed by MCBA/CSA, provides for entry of material and labor tickets; supports standards or estimates for variance analysis; provides job cost analysis reports by job, department, work center, part, and description; prints variance analysis reports for labor and material; includes rate, yield, performance, and quantity breakdowns in the variance analysis; and allocates fixed and variable overhead. The software interfaces to five other CSA packages.

A version of this product is available for VAX computers.

1016 Manufacturing

Price: \$2050 - \$2255

Contact: William Ferris
(203) 735-1819

COMPUTER SOFTWARE ASSOCIATES

366 Main Street, P.O. Box 492
Ansonia, CT 06401

Labor Performance

PDP-11 Operating System: Micro/RSTS, Micro/RXS, RSTS, RSX

Keywords: • Cost accounting • Production control
• Shop floor control

This system, developed by MCBA/CSA, provides centralized data entry of labor transactions; breaks down labor into direct and indirect categories; generates payroll attendance records; supports clock card entry and editing and employee attendance tracking; provides a labor performance report showing an analysis of each employee and shop foreman by percent performance, percent direct hours, and percent productivity; supports salaried employees and crew labor reporting; provides regular, overtime and double-time wages; and interfaces to four other CSA packages.

A version of this product is available for VAX computers.

Price: \$2050 - \$2255

Contact: William Ferris
(203) 735-1819

COMPUTER SOFTWARE ASSOCIATES

366 Main Street, P.O. Box 492
Ansonia, CT 06401

LP (Linear Programming)

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Decision support • Modeling/simulation
• Pharmaceutical

LP performs a very interactive mathematical programming function (analysis) on a given matrix of data. LP allows the use of <, =, > constraints and outputs a message to the user of a feasible, infeasible, or unbounded solution. LP permits a matrix of up to 8000 variables and solves a wide range of business and engineering problems, including product mix, scheduling, distribution, forecasting, marketing, government efficiency, and production planning.

The price is a 1-time license fee.

A version of this product is available for VAX computers.

Price: \$5000

Contact: Jon Prescott
(619) 247-7219

J & S ASSOCIATES
13407 Quapaw Road
Apple Valley, CA 92307

M-Net™ (Manufacturing Network)

PDP-11 Operating System: RSX

Keywords: • Data collection • Networking • Quality control
• Shop floor control

M-Net is a layered network designed for the manufacturing environment. Sales to date have been in the IC, or integrated circuit, manufacturing area, including IC test houses and volume IC consumers. M-Net enables the user to interconnect different makes and types of production and test equipment into a comprehensive network without purchasing and maintaining levels of proprietary, noncompatible networks. The equipment need not be in the same location as M-Net.

The need to collect data from different design, fabrication, and test equipment is paramount in the integrated circuit industry. Valuable engineering labor and turnaround time are saved, ultimately leading to greater productivity, higher yields, greater quality control, and lower cost.

M-Net has been designed and developed to provide real-time data collection, analysis, control, and display, rather than trying to adapt an existing business system to meet production needs. The key features provide support for a variety of equipment from many vendors; centralized test program control and updating; flexible, easy, nondisruptive modification of network configuration; in-house expertise to modify and to customize the system; and field upgradability to interface with new shop floor systems as older equipment is phased out.

A version of this product is available for VAX computers.

Price: \$15,000 - \$45,000

Contact: Girish Shah

(602) 622-7707 or Telex: 383754 INTL

INTERNATIONAL ELECTRONICS CORP.

1518 E. Broadway

Tucson, AZ 85719

Machinery Monitoring Software System

PDP-11 Operating System: RSX

Keywords: • A/D, D/A • Data collection
• Device drivers/handlers • Mechanical engineering

This system provides for collecting operating vibration and acoustic emission data for up to six satellite PDP-11 machines, transmitting the information to a host through a DECnet network, and analyzing and reporting the data to the plant operators and machinery engineers. A dual-channel high-speed vibration unit allows the machinery engineer to perform either a single-channel or simultaneous dual-

channel spectral analysis. The satellites scan the transducers and process the information for transmission to the host. The package includes a subroutine library, drivers for input units, and applications software.

Price: \$20,000 – \$50,000

Contact: Robert C. McGill
(713) 869-9371

HOUSTON ENGINEERING RESEARCH CORP.
7250 Wynnwood, Houston, TX 77008
P.O. Box 3246, Houston, TX 77253-3246

MAESTRO

PDP-11 Operating System: RSX

Keywords: • CAD/CAM • Mechanical engineering
• Numerical control • Production control

This state-of-the-art product addressing DNC and factory feedback provides an approach that is appropriate for the operation of any generation of NC-driven production machine — mills, lathes, wirewrap, insertion, CMM, and so on. MAESTRO enables manufacturers to extend their CAD investment for the management of part programs out to the factory floor. As a software management tool, MAESTRO enables manufacturers to manage part program libraries, edit part programs, send electronic mail, monitor machine status, and distribute part programs. MAESTRO's flexibility allows manufacturers to use data communication specific to their environments — local area networks, fiber optics, or standard coaxial cable. For the production machine adapter, MAESTRO offers a choice of three options on how to best interface to any one particular machine. That assures the manufacturer of an approach that fully uses the investments made in the production machine. Each adapter (CNC adapter, DNC adapter, and behind-the-tape reader adapter) is built around standard DIGITAL components and assures the manufacturer of a reliable, consistent, and easily maintained approach to DNC/factory feedback.

A version of this product is available for VAX computers.

Price: \$18,500

Contact: C. Buckley
(612) 934-1040

MANUFACTURING DATA EXCHANGE
7683 Commerce Way
Eden Prairie, MN 55344

Manufacturer Order Processing

PDP-11 Operating System: Micro/RSTS

Keywords: • Accounts receivable • Billing • Order processing
• Production control

This system, written in DIBOL 83, combines production planning with receivable accounting to facilitate planning and controlling production according to customer demand. Production reports organize production

requirements by product, scheduled shipping date, or customer order. Receivable accounting includes customer statements and account inquiry, aged trial balance reporting, and cash receipts forecasting. This system can be integrated with general ledger. Special features for order processing and invoicing maintain a customer's order until shipped; allow adding, editing, or canceling line items at any time; and support partial shipments and back ordering.

Price: \$3875

Contact: Margaret Hodder
(617) 484-1709

CORPORATE CONSULTING CO.

556 Trapelo Road

Belmont, MA 02178

Manufacturing Control System

PDP-11 Operating System: RSX, RT-11, ULTRIX-11

Keywords: • Inventory • Production control

Memory required: 128K.

This program, written in RM/COBOL, is designed for complete control of the job costing and the inventory maintenance of a manufacturing concern. This system is menu driven, with multiuser capabilities; maintains historical costs for each item, eliminating time spent in record keeping; figures sales quotes from historical data; updates purchase orders automatically; and allows the user to set price code levels, resulting in substantial savings in account management time.

A version of this product is available for VAX computers.

Price: \$11,500

Contact: Bob Ginn
(901) 767-3759

INDUSTRY SOFTWARE SALES, INC.

P.O. Box 240804

Memphis, TN 38124

Manufacturing Systems

PDP-11 Operating System: RT-11, TSX-PLUS™

Keywords: • Bar coding • Information management

Bar-coded tags or labels allow virtually error-free input. This system will track and report manufacturing information on a management or user level. Minor modifications to fit your exact manufacturing tracking needs are easily done.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: Available upon request

Contact: John Logan
(503) 297-1627

DENNISON EASTMAN CORP.
6400 S.W. Canyon Court
Portland, OR 97221

MCS-3 (Manufacturing Control System)

PRO Operating System: XENIX™

Keywords: • Financial planning • Inventory • MRP
• Shop floor control

MCS-3, written in RM COBOL, is a completely integrated inventory control/MRP system with more than 450 installations worldwide. The system's eight manufacturing packages, designed to integrate with four MBSI accounting packages, can be purchased as a complete package or individually. The MCS-3 manufacturing packages cover purchasing, inventory control/bill of materials, order entry, material requirements planning, financial resource planning, shop floor control/job costing, capacity requirements planning, and a report writer. The purchasing module includes order tracking, purchase order history, and a vendor performance analysis. The inventory control module includes bill of materials, stock room locations, and purchasing. The customer order entry module provides invoicing, order history, and sales analysis. The material requirements planning module includes the master production schedule and bill of materials processor. Shop floor control and capacity requirements work together and provide standard costs and shop routings for each shop order entered. Shop floor control also includes job costing and job estimating. The report writer allows users to design custom reports from the existing data files and provides an interface between MCS-3 data files and available word processing, spreadsheet, and data base programs.

XENIX™ is a trademark of Microsoft Corporation.

Price: \$750 - \$2500

Contact: Susan E. Estes
(614) 895-0738

MICRO MANUFACTURING SYSTEMS, INC.
2600 Corporate Exchange Drive, Suite 190
Columbus, OH 43229

MICRO LP

PRO Operating System: P/OS

Keywords: • Energy • Mathematics • Petroleum • Scientific

MICRO LP is designed for the in-core solution of linear programming problems. The software, written in FORTRAN, conforms to MPS format for input and output and is thus compatible with such mainframe codes as SCICONIC. Program features include the ability to accept command input interactively from a terminal, while enabling commands to be stored on a file for regular production running; basis input and output and right-hand side and cost ranging; and the ability to be used with a matrix generator, such as that produced by Scicon's MGG.

In the United States, contact J. Creegan, Ketron Inc., 17th Floor, Rosslyn Centre, 1700 North Moore Street, Arlington, VA 22209 (703) 558-8700.

Price: \$500

Contact: Paul Bryan-Tatham
(0908) 585858

SCICON U.K. LTD.
Wavendon Tower, Wavendon
Milton Keynes MK17 8LX Great Britain

MIL-Concept Production Control System

PDP-11 Operating System: CTS-300, RSTS

Keywords: • Aeronautics/aerospace • MRP
• Production control

This production-control applications package is for Ministry of Defense suppliers and manufacturers in the aerospace industries. The package provides for material requirements to be planned and procured against specific contracts and allows components to be traced from delivery through manufacturing.

Many of the features of MIL-Concept are paralleled in the standard package; however, MIL-Concept is a fundamentally different system, and the two products cannot be interchanged.

Price: £8000 - £24,000

Contact: Nicola Nobes
(0276) 76303

CONCEPT COMPUTER SYSTEMS LTD.
Bagshot House, High Street
Bagshot, Surrey GU19 5AF England

Milltech: Melt Management System

PDP-11 Operating System: RSX

Keywords: • Metals • Process control • Purchasing
• Quality control

Milltech is a modular, closed-loop, integrated melt management process control system that consists of seven modules: Meltech, the inventory and practice data acquisition module that provides a least-cost charge design and management reports; Controltech, the arc furnace monitor and control system; Labtech, the chemical laboratory interface module; Addtech, the refining optimization module; Ladletech, the automated ladle metallurgy module; Statech, the statistical analysis package; and Buytech, the least-cost raw-material purchase module.

Milltech is written in FORTRAN-77 and has a memory of 256KB RAM and 20MB disk.

A version of this product is available for VAX computers.

Price: \$65,000 – \$600,000

Contact: Keith T. Hageney
(319) 359-5000

THE MILLENNIUM CO.
1910 East Kimberly Road
Davenport, IA 52807

MINI LP

PDP-11 Operating System: Micro/RSX, RSX

Keywords: • Energy • Mathematics • Petroleum • Scientific

This software, written in FORTRAN, is designed to solve in-core linear programming problems. MINI LP conforms to MPS format for input and output and is thus compatible with such mainframe codes as SCICONIC; accepts command input interactively from a terminal, while enabling commands to be stored in a file for regular production running; provides basis input and output and right-hand side and cost ranging; and can be used with a matrix generator, such as that produced by Scicon's MGG.

Price: \$3750 – \$4500

Contact: Paul Bryan-Tatham
(0908) 585858

SCICON U.K. LTD.
Wavendon Tower, Wavendon
Milton Keynes MK17 8LY Great Britain

MMS (Materials Management System)

PDP-11 Operating System: RSX

Keywords: • Inventory • Materials handling • Metals
• Purchasing

MMS is a fully integrated linear programming software package for the metals industry and includes least-cost charge design, final alloy additions, inventory control, purchasing optimization, and management reporting. MMS consists of the following programs:

- Least Cost Charge Design reduces metal mix cost, produces a more consistent product, and allows higher quality control and fewer off-analysis heats. This program optimizes on natural elements as well as complex relationships between elements.
- Least Cost Final Additions produces final addition calculations with computer speed, reducing tap time and unnecessary alloy additions.
- Inventory maintains an up-to-date materials inventory and provides accurate reports on material receipts and material usage on a heat-by-heat, month-to-date, and year-to-date basis.
- Purchase Optimization calculates the maximum purchase price for each material under consideration. Thus, effective purchases are made by evaluating your current inventory against current market conditions.
- Management Reporting gives management personnel access to recent, accurate information from a common data base. Customized

reports give the information needed to track production, productivity, and costs involved in the metals industry.

Pyromet Systems provides an optional annual software-maintenance agreement. The programs may be leased or purchased and are available in separate pieces or as a complete package. Other standard and custom-designed packages are also available. All software is fully documented and supported.

A version of this product is available for VAX computers.

Price: \$10,000 – \$50,000

Contact: Donald Eckley
(412) 828-0680

PYROMET SYSTEMS, INC.
Expressway Park, Gulf Lab Road
Pittsburg, PA 15238

MMS-R Radio-Dispatched Material Management System

PDP-11 Operating System: RSX

Keywords: • Bar coding • Inventory • Materials handling

MMS-R for stockrooms, warehouses, WIP storage facilities, and distribution centers provides real-time inventory control through radio dispatching of mobile operators for on-the-spot data capture and instructions. MMS-R includes part location indexing, providing exact locations for each item; and space management, providing automatic assignment of free space to incoming items. The system also provides audit trail reporting for a complete log of all inventory transactions, as well as management reports and CRT displays of activity, inventory, work load, and status.

Operators are dispatched to perform picking, stocking, cycle counting, and pallet removal operations interactively by radio terminal. Exceptions are handled immediately, and low-limit counts can be taken whenever inventory levels fall below easily counted levels. Operator stops are sorted geographically for efficient routing and revised whenever exception conditions arise.

Host computer communications interfaces are available for down-loading work requirements from planning and scheduling systems and up-loading results.

Material and locations can be bar-code labeled for immediate verification before completion of each material transaction.

A version of this product is available for VAX computers.

Price: \$60,000

Contact: Aaron Albert
(212) 695-5001

RGTI SYSTEMS SOFTWARE
One Penn Plaza, Suite 4835
New York, NY 10119

MRP (Material Requirements Planning), MCBA, Inc.

PDP-11 Operating System: CTS-300, Micro/RSX, RSTS, RT-11, XENIX™

Keywords: • Materials handling • MRP • Production control
• Scheduling

MRP supports master production scheduling, generates time-phased requirements for all levels of your product structure, computes when and in what quantities component parts are required, uses a fast regeneration algorithm, reports exceptions with recommended changes to order quantities and dates, pegs material requirements to show which customer orders or shop orders were created by demand, supports changes in product structures through parent/component effectivity dates, allows the definition of three planning-period calendars, enables full printer spooling capabilities, and supports security and multiple companies.

Any report generated by MRP can be spooled to the disk file. You can later review what reports are stored on the disk and print the ones you want.

The security system allows up to 200 passwords and provides access restrictions at the file level by company.

Multiple-company support allows up to eight companies to use the system at any time.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$4000 - \$6000

Contact: Sales Representative
(818) 957-2900

MCBA, INC.
2441 Honolulu Avenue
Montrose, CA 91020

MYCRO/11 Process Management System

PDP-11 Operating System: RSX

Keywords: • Energy • Management • Process control
• Report writer

Memory required: 1MB.

This dedicated host computer extension of a distributed control system offers a variety of management information, reporting, graphics, alarm analysis, and batch recipe functions. The package also includes all necessary communications and application data base configuration functions. Either a complete or a customized package can be purchased.

A minimum target system requires RSX-11M-PLUS operating system running on PDP-11/23 PLUS.

Price: \$5000 – \$30,000

Contact: B. J. Kamphorst
(416) 457-9638

MOORE INSTRUMENTS LTD.

P.O. Box 370

Brampton, Ontario L6V 2L3 Canada

NC Tape Verification for Manufacturing Operations

PDP-11 Operating System: CTS-300, RSX, RT-11

Keywords: • CAD/CAM • Numerical control

• Pre- and postprocessors • Production control

This system provides production drawings for checking and verifying the dimensions of the part to be stamped and for correcting tooling setup and machine operations before punching operations are initiated. The program saves production down time and set-up time, thereby increasing the use of NC equipment. The user/machine interface prompts help the operator in data entry. The system features drawing annotation and legends, scaling, part development dimensions, and a description of the turret tooling to make the part. The description verifies the NC tapes by generating a finished drawing to the resolution of .005".

The system uses the standard tape generated by the tape-preparation system. Use of that tape eliminates any intermediary tapes or tape-handling operations. No errors occur in producing and verifying the final tape. The tape used by the NC machine will be drawn by the NC verification drawing system.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Joseph F. deSpautz
(609) 234-3666

APPLIED DIGITAL COMMUNICATIONS, INC.

214 Flynn Avenue

Moorestown, NJ 08057

NCL — Interactive Graphics Software

PDP-11 Operating System: RSX

Keywords: • CAD/CAM • Numerical control

• Pre- and postprocessors • Programming tools

Memory required: 1MB main memory, 25MB hard disk.

This complete 2- through 5-axis machining package, developed by Mills Data Systems, is for multiaxis applications, such as production aerospace, 3-D molds, and dies. Three-dimensional NCL offers complete user tool control for 3-D contouring on 3-, 4-, and 5-axis machine tools. The system is written in FORTRAN-77 and features 3-dimensional free-form sculptured surfaces; curve and surface fitting; an on-line data base for canonical geometry storage and retrieval; standard APT-compatible CLFILE output, single-statement regional milling,

macros; loops; refs; sys; tracut; copy; pocketing; automatic geometry labeling; family-of-parts programming; simultaneous control of the cutter to the drive; part and check surfaces even when all three surfaces are sculptured surfaces; cone cutters, bell cutters, and barrel-end cutters; complete 4- and 5-axis continuous-path tool control, including tool-axis fanning; off-line plotting of CLDATA or punch file; and digitizing.

Programming can be accomplished interactively from a graphics tablet or can be submitted in a batch mode, with no user intervention required. Interactive programming at a color graphics workstation allows the user to visually process and develop programs on line. Geometry and the cutter path can be viewed interactively from any angle and at any scale. Cutter description, cutter coordinates, tool axis vectors, and geometry canonical data can be interrogated and displayed as numerical data to the screen for immediate verification.

NCL generates a user-readable source file. When E.O. changes or program optimizing is required, the user need only change the source in the affected area. When the job is reprocessed, NCL automatically rebuilds geometry associated with the change and coordinates the cutter motion. No user intervention is required.

SURFPACS — special surface modules developed for the aerospace industry — enable the user to accept 3-D airframe surfaces directly from various primes, thus eliminating the tedious process of developing surfaces from point string loft cuts. SURFPACS leave no chance for errors or deviations that normally result from the development of raw surface data. The user simply loads the prime provided surfaces into NCL with the proper SURFPAC, and they are ready for multiaxis cutter path generation.

A version of this product is available for VAX computers.

Price: \$35,000 — \$100,000

Contact: Bryn Jones
(714) 898-2649

NUMERICAL CONTROL COMPUTER SCIENCES
12552 Western Avenue
Garden Grove, CA 92641

NCNET

PDP-11 Operating System: Micro/RXS, RSX, RT-11

Keywords: • CAD/CAM • Networking • Numerical control
• Shop floor control

Memory required: 90K bytes.

This cost-effective communications network allows distribution of machine tool manufacturing data between the machine tool controller and the host computer. NCNET can be used with any of RWT's NCPRO systems or other compatible computers and NC machine tools.

NCNET eliminates the storage, retrieval, and distribution of punched NC tapes; monitors machine tool status and use; and provides memory expansion of more than 4000 feet of tape at each machine tool. NCNET ensures that a program will be used on the correct machine and removes the possibility of running obsolete tapes. Tapes can be edited and back plotted. Data integrity is ensured with state-of-the-art error detection and correction.

The program provides down-line loading of part programs, tool offsets, set-up sheets, macros, CMM coordinates, and control executives. A log of transactions with the date and time is provided. Long programs that do not fit into control memory can be segmented.

Using advanced communications hardware, NCNET provides a tool to collect shop floor data with bar code/card reader and to control the daily NC production schedule. Management reports on NC shop production status are provided. Additional station and controller interfaces can be added to network additional machine tools. NCNET allows users to build networks on a single, service-free, shielded wire at distances of up to three miles. The system can be easily expanded to accept new machine tools.

A version of this product is available for VAX computers.

Price: \$3000 - \$7000

Contact: Steve Hoffman
(312) 952-1710

RWT CORP.
415 West Golf Road, Suite 28
Arlington Heights, IL 60005

NCTAPE (Numerical Control Tape Processing System)

PDP-11 Operating System: RSX

Keywords: • CAD/CAM • Data collection • Graphics
• Numerical control

NCTAPE allows an NC programmer to create or modify NC programs quickly and easily. NC programs are created from a computer-controlled measurement of a part, using a coordinate measuring machine and digitizer. Programs using linear and circular interpolation or linear interpolation can be created. Sequence numbers are generated automatically. Paper tape copies of a program can be punched in either RS244 or ASCII character code. An NC program can be modified to produce a part either larger or smaller than the original part. An NC program can also be modified to produce several parts. An inspection program allows the dimensions of a part to be compared with the dimensions of a previously digitized part. NCTAPE is written in FORTRAN.

A version of this product is available for VAX computers.

Price: \$6000

Contact: Kenny Purcell/Jim Levie
(205) 536-8581

REMTECH, INC.
2603 Artie Street
Huntsville, AL 35805

NUFORM Level I

PDP-11 Operating System: RSX

Keywords: • CAD/CAM • Numerical control
• Pre- and postprocessors • Shop floor control

This comprehensive system, consisting of a universal processor and postprocessors, prepares tapes and control data for N/C tools used in the 2½-axis mode. That mode is generally used for 3-, 4-, and 5-axis machining centers with two axes in continuous and simultaneous motion and all other axes in a positioning mode only, except for ramp cuts, and so on. The same philosophy and the same input handle 3-, 4-, and 5-axis machining centers, 2- and 4-axis lathes, point-to-point, punch presses, grinders, wire elox, flame cutters, and lasers. For example, the user does not have to learn a different system for lathes or punch presses, and so on.

The brief parameterized all-numeric input eliminates the heavy syntax and other troublesome characteristics of the alphanumeric systems and drastically reduces programming time and computer running time. The NUFORM system handles the full spectrum of geometrics, methods, and machining operations.

Available with NUFORM Level I are a plot of coordinates used in defining the part; cutter center line plots in XY, XZ, YZ, including tool size and position plot for drill cycles; isometric and perspective plots; lathe and punch press plots; and an unfolding plot for machining centers with rotary tables.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: A. S. Thomas
(617) 329-9200

A. S. THOMAS, INC.
355 Providence Highway
Westwood, MA 02090

NUFORM Level II

PDP-11 Operating System: RSX

Keywords: • CAD/CAM • Numerical control
• Pre- and postprocessors • Shop floor control

This interactive design tool for complex geometries, consisting of a universal processor and a postprocessor, handles 3-dimensional contouring in which three, four, or five axes may move simultaneously and continuously. The 3-dimensional plot capability permits the user to view the object at any desired orientation. The system is applicable to sculptured surfaces, such as airfoils, swarfing, and all 3-dimensional complex geometries (dies, molds, patterns, and so forth). The system

has the full capability of blending surfaces and orienting the tool axis to any desired attitude with respect to the surface or surfaces.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: A. S. Thomas
(617) 329-9200
A. S. THOMAS, INC.
355 Providence Highway
Westwood, MA 02090

OMNICONTR® and OMNIPREP®

PDP-11 Operating System: Independent

Keywords: • CAD/CAM • Data collection • Numerical control
• Shop floor control

OMNICONTR, a CAD system for large and small facilities, distributes tape code data to machines and collects shop floor information. Hardware and software work together to solve machine tool application problems. The system's major components are the host module, a behind-the-tape-reader interface, a data display terminal, a DNC increment, and a program call-up box.

OMNIPREP tape preparation systems use the SPLIT® programming language and are designed as flexible, low-cost disk-based systems that reduce the time required to generate an NC part program. The system's major components are a line printer, a plotter, a tape/reader punch, a data display terminal, and either a hard or a floppy disk drive.

A version of this product is available for VAX computers.

Price: \$10,000 - \$100,000

Contact: Robert J. Samson, Vice President, Sales and Marketing
(815) 229-4300
WCI — CONTROLS AND DATA SYSTEMS
527 Colman Center Drive, P.O. Box 7030
Rockford, IL 61125

Oscar

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Cost accounting • Inventory

Oscar is aimed primarily at the small to medium-size manufacturing company faced with controlling valuable stock in an assembly building environment. This sophisticated package for stock control and recording enables you to keep inventory overhead under tight control. Information can be either displayed instantly on the screen on a conveniently located computer terminal or printed out as hard copy.

Oscar contains English-like language and handles parts explosion, advance stock allocation, kit issue, on-line inquiry, cross-referencing, costing, and security. A materials and capacity-scheduling capability

1030 Manufacturing

is available. For VAX installations, supplier order generation is available.

A version of this product is available for VAX computers.

Price: £4000 – £9000

Contact: R. A. Stock
(0734) 699777

D. M. ENGLAND & PARTNERS LTD.

Lytham Court, Lytham Road

Woodley, Reading

Berkshire RG5 3PQ England

PACKET: Bill of Materials for Manufacturing

PDP-11 Operating System: Micro/RSTS, RT-11

Keywords: • Bill of materials • Inventory
• Materials handling

This bill of materials handling system, written in BASIC, stores lists of parts used in assemblies or subassemblies. To create a parts list, the user enters the part number and quantity of each item used in the assembly or subassembly. When the program is run, it picks up the description of the part from INVENT, the inventory system, and prints out the parts list in part number order, complete with description of each part.

Additional features allow the user to print the parts list with prices and total cost; check the parts list against stock to determine which parts are in stock and in what quantity; list parts not in stock so they can be ordered, to build the assemblies required; remove all the parts for an assembly from inventory; and add to, remove from, modify, or edit the parts list.

Price: \$985

Contact: Raymond H. Green, President
(813) 360-1967

RAY GREEN AND ASSOCIATES

603 55th Avenue

St. Petersburg Beach, FL 33706

PC/DBS (Process Control Data Base System)

PDP-11 Operating System: RSX

Keywords: • A/D, D/A • Instrumentation • Process control
• Signal processing

PC/DBS simplifies the design, implementation, and documentation of process automation systems for both industrial plant and laboratory systems. The package focuses on developing control strategies. The user defines and names process elements in simple input statements that PC/DBS uses to create a data base. Process elements are sorted and stored in a name table accessible to all PC/DBS programs. User-defined alarms and control strategies are subsequently added to the data base.

Specifically designed for DIGITAL computers, PC/DBS is compatible with both PDP-11 and LSI-11 CPUs (running under RSX-11M Version 4.1), as well as with the KineticSystems LSI-11/23-based microcomputer system and full line of standard CAMAC (IEEE-583) process interface modules. Use PC/DBS to control, alarm, display, simulate, report, monitor, trend, document, scan, and log. The system features English-like control statements, self-generated documentation, high/low limits checking, multiple CRT/multiple access, conversion to engineering units, and remote debugging/diagnostics.

Price: \$14,000 - \$25,000

Contact: Roderick H. Wischermann

(815) 838-0005

KINETICSYSTEMS CORP.

11 Maryknoll Drive

Lockport, IL 60441

PEPS (Production Estimating and Planning System)

PDP-11 Operating System: RSX

Keywords: • CIM • Forecasting • Numerical control
• Project management

PEPS is a computer-aided time and cost-estimating package for primary machining processes. Time and cost calculations are based on accepted machining standards. You can compile and maintain data banks of machine specifications and machinability of materials so that data on new machines and materials can be added as needed. As factory overhead rates change, you make the appropriate changes. The menu-driven process makes PEPS simple to use and easy to learn. Nine reports assist all levels of personnel in the most efficient management of their machining operations.

A version of this product is available for VAX computers.

Price: \$12,000 - \$15,000

Contact: Earl White

(214) 255-3124

COMPUTER INTEGRATED MANUFACTURING CO.

106 Decker Court, Suite 300

Irving, TX 75062

Perspective/700 Bill of Materials System

PDP-11 Operating System: RSTS

Keywords: • Bill of materials • Cost accounting • Inventory
• Order processing

This system lets the user define parent items or finished goods and their associated kits, assortments, subassemblies, or raw-material components. Parent item numbers are verified against the Perspective/700 inventory control master file. A bill of material cost listing can be generated on demand, with item description and costs extracted from the inventory master file. An optional depletion processor can

1032 Manufacturing

relieve component inventory based on posting of finished goods receipts.

The Materials Requirements Report (MRP) forecasts inventory requirements (finished goods, kits, assortments, and, optionally, raw materials). When combined with Perspective/700 Customer Order Processing and Purchasing systems, a fully automated system is achieved. MRP allows the user to define up to six time frames, based on date ranges, for reporting purposes. Reports include the multilevel bill of materials, bills costed at current or standard, the where-used report, decimal components quantities, the regenerative material requirements report, and multiuser/multicompany report.

A version of this product is available for VAX computers.

Price: \$2000 - \$5000

Contact: Michael B. Andelman, President
(312) 953-2220

LIOCS CORP.
246 E. Janata Boulevard
Lombard, IL 60148

PICAM

PDP-11 Operating System: RSX

Keywords: • Information management • MRP • Planning aids

This new MRP package for smaller manufacturing firms is extremely flexible and can be installed easily by personnel who have little or no data processing experience. PICAM's design ensures that no special data processing skills are required. Current personnel, with proper education in the use of MRP methods, will be able to operate PICAM.

PICAM's capabilities include MRP processing, master scheduling, rough-cut capacity planning, maintenance of item master records, bill of material maintenance, order entry and shipping dispatch, shop order processing with manufacturing text capability, capacity-requirements planning, shop floor control (including job time collection), and cycle counting.

Basic capabilities are the same on any of the compatible PDP-11 models. Companies having larger operations or more users can be accommodated with one of the larger PDP-11s. Smaller firms will benefit from the low initial investment required to support PICAM.

Price: \$25,000

Contact: William W. Habel III
(412) 458-6391

PINE INSTRUMENT CO.
101 Industrial Drive
Grove City, PA 16127

Pioneer COMMAND Bill of Materials Processor Module**PDP-11 Operating System:** RSTS**Keywords:** • Bill of materials • Engineering

This module, developed by Pioneer Software International, is interactive, on line, user friendly, and comprehensive. The system can create and maintain bills of material, which can include assemblies and sub-assemblies down to a maximum of 99 levels. The module is an integral part of Pioneer's COMMAND System for Financial Management, Distribution, and Manufacturing. Pioneer's COMMAND system is written in BASIC-PLUS-2 and requires a minimum of 128K words. Because the system is based on UserWare International's USER-11 Database Management System, extensive on-line inquiry and ad hoc reporting are available.

The bill of materials processor, combined with the parts master file, gives, for any particular assembly, a list of all subassemblies, purchased parts, and raw materials involved in its manufacture and shows the required quantities and costs of each. A structure file is maintained that links each assembly part to its components and allows searching in both directions through the assembly structure. Where-used information can be produced automatically. Ghost or phantom assemblies are supported. Provisions are made to copy a structure, allowing for same-as-except structures. Option codes and effecting dates are supported. Mass replacements and deletions are allowed. Screen displays include indented and single-level explosions, indented and single-level where-used, and trial kitting. Numerous reports are available, including indented and single-level explosion, single-level and summarized where-used, incremental and accumulated cost, and stock status.

A version of this product is available for VAX computers.

Price: \$4000 - \$12,000**Contact:** Richard A. Baldwin, Executive Vice-President
(619) 745-6006

USERWARE INTERNATIONAL

2235 Meyers Avenue

Escondido, CA 92025

Pioneer COMMAND Master Production Scheduling Module**PDP-11 Operating System:** RSTS**Keywords:** • Inventory • Production control

This module, developed by Pioneer Software International, is an interactive, on-line, user-friendly system for creating a master production schedule for input to COMMAND MRP. The module is an integral part of Pioneer's COMMAND System for Financial Management, Distribution, and Manufacturing. Pioneer's COMMAND System is written in BASIC-PLUS-2 and requires a minimum of 128K words. Because the

system is based on UserWare International's USER-11 Database Management System, extensive on-line inquiry and ad hoc reporting are available.

The Master Production Schedule (MPS) is created by reviewing sales orders, purchase orders, production orders, and forecasts for finished goods and comparing them with inventory projections by period to establish a net demand by period. Each individual source of information can be optionally included in the MPS, as can firm planned orders. The MPS can then be used as input to the COMMAND Material Requirements Planning System (MRP).

If required, the MPS can be put through Rough Cut Capacity Planning (RCCP) first, which is included in this module. RCCP matches the MPS against a resource load profile showing the loading against each work center. The MPS can be updated on line in order to smooth the load.

A version of this product is available for VAX computers.

Price: \$6000 - \$16,000

Contact: Richard A. Baldwin, Executive Vice-President
(619) 745-6006

USERWARE INTERNATIONAL
2235 Meyers Avenue
Escondido, CA 92025

Pioneer COMMAND Material Requirements Planning Module

PDP-11 Operating System: RSTS

Keywords: • Inventory • Materials handling • MRP

This module, developed by Pioneer Software International, is a part of Pioneer's COMMAND System for Financial Management, Distribution, and Manufacturing. Pioneer's COMMAND system is written in BASIC-PLUS-2 and requires a minimum of 128K words. The module requires the Bill of Materials Processor. Because the system is based on UserWare International's USER-11 Database Management System, extensive on-line inquiry and ad hoc reporting are available.

The MRP system works on a regenerative basis. Typically, MRP reports are generated on a regular basis somewhere between a week and a month. When the MRP build is started, the operator can include open sales orders, current purchase and work orders, and master production scheduling. The system allows several reorder policies to be used, from a simple replacement of parts used to a sophisticated EOQ/Minimum Inventory level based on previous usage. Planned orders are produced by the system, which can then be firmed up. A variety of screen displays are available, including the review of all data used in generating usage schedules for a given item. Numerous reports are available, including requirements planning detail, planned purchase orders, planned work orders, value of purchase orders by periods, recommended reschedules, and recommended cancellations.

A version of this product is available for VAX computers.

Price: \$6000 – \$16,000

Contact: Richard A. Baldwin, Executive Vice-President
(619) 745-6006

USERWARE INTERNATIONAL

2235 Meyers Avenue

Escondido, CA 92025

Pioneer COMMAND Production Control Module

PDP-11 Operating System: RSTS

Keywords: • Production control • Project management
• Scheduling

This interactive, on-line, user-friendly system, developed by Pioneer Software International, consists of work order processing and costing, routing, and work center loading. The Production Control module is a part of Pioneer's COMMAND System for Financial Management, Distribution, and Manufacturing. Pioneer's COMMAND System is written in BASIC-PLUS-2 and requires a minimum of 128K words. Because the system is based on UserWare International's USER-11 Database Management System, extensive on-line inquiry and ad hoc reporting are available.

This module provides a means of managing the generation, progress, and closing of work orders in a batch assembly and manufacturing environment. Because this module is part of the COMMAND system, it is normally installed with the Bill of Materials Processor and Inventory Management modules. The work order processing and costing system provides a basis for controlling work in progress on a batch or a job basis. Work orders can be created manually, from a bill of materials or from routings. Extensive provisions are available for modifying, scheduling, and rescheduling work orders. The routing system allows the operator to detail both components and operations into job steps. Those routings, combined with the work order information and manpower information, are used by the Work Center Loading module to schedule jobs across work centers. A variety of screen displays are available, as well as numerous reports.

A version of this product is available for VAX computers.

Price: \$6000 – \$16,000

Contact: Richard A. Baldwin, Executive Vice-President
(619) 745-6006

USERWARE INTERNATIONAL

2235 Meyers Avenue

Escondido, CA 92025

PMCS (Process Monitoring and Control System)

PDP-11 Operating System: RSX

Keywords: • Engineering • Instrumentation • Process control
• Real time

Memory required: 256KB.

This product provides real-time monitoring, display, alarm, reporting, and control of continuous industrial processes on the RSX-11M operating system for up to eight operator stations. Color graphics include live-updated process flow graphics display of current values and alarms.

PMCS supports user-written FORTRAN subroutines with full access to the data base. Data base definition is through interactive CRT, with fill-in-the-blanks forms to specify variable names, scan frequencies, control gains, and so on. Optional functions include supervisory-level control with feedforward or feedback.

The system performs time-scheduled scans of analog and digital process inputs and converts process units into engineering units. Chainable general equations are used for calculations, such as calculating a value as a function of six selectable terms or for decision making and initiating the processing of variables on a special basis.

This software reduces the overall cost and time to complete projects by enabling the user to concentrate on the industrial application rather than on writing software programs.

Refer to SPD #14.75.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the VAX computer.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

PMS (Preventive Maintenance Scheduling System)

PDP-11 Operating System: RSTS

Keywords: • Property maintenance • Scheduling
• Warehousing

This system provides maintenance scheduling, repair parts and warehouse parts inventories, backlogs, repair history, parts reorder notification, equipment performance, equipment costs, and history recall by keywords. The user-friendly interface enables non-data processing specialists to use the system. The user-defined system allows scheduling of maintenance by calendar or by miles, tons, and so on. PMS services multiple users and uses file sharing and on-line update and inquiry. The system is supported by 1200 baud modem.

The software can be purchased separately, or the system is available as a turnkey system with the hardware, operating system, application software, and data files "pregenerated" and ready for data entry.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: William E. Walo

(702) 384-7641

SIMCO, INC.
801 S. Rancho Drive, Suite E2B
Las Vegas, NV 89106

P/O (Purchase Order and Receiving), MCBA, Inc.

PDP-11 Operating System: CTS-300, Micro/RXS, RSTS, RT-11,
XENIX™

Keywords: • Distribution • Purchasing

P/O helps ensure that material in the correct quantity and quality is available when needed and wanted. Improved methods of vendor analysis help reduce shortages and the delivery of off-standard material.

P/O facilitates better use of the buyer's time. Time-consuming semiclerical activities are reduced or eliminated. The buyer thus spends more time seeking a better price while maintaining reliable sources of supply. The cash requirements for accounts payable can be developed from purchase orders.

Receiving significantly reduces the overall time from receiving to stores. Critical material can be delivered to the correct designation more quickly. Where information or documents are missing, P/O provides extensive information to help identify the receipt.

P/O, which requires MCBA's Inventory Management (I/M) and Accounts Payable (A/P), allows on-line entry and editing of purchase orders and receipts, supports blanket purchase orders and scheduled receipts reporting, prints purchase orders, provides powerful vendor analysis and on-line cash requirements inquiry, allows the user to report rejects at receipt time, notifies the user when early shipments and over-/undershipments occur, supports multiple vendors for each item, allows for preentered table-driven notes and manually entered notes for each purchase order and/or line item, interfaces to three other MCBA application packages, and supports multiple companies and password security.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$3000 - \$4500

Contact: Sales Representative
(818) 957-2900
MCBA, INC.
2441 Honolulu Avenue
Montrose, CA 91020

PRINCE (Production Information Center)

PDP-11 Operating System: RSX

Keywords: • Bill of materials • Inventory • Production control
Memory required: 512KB.

This manufacturing planning system, written in COBOL, was developed in cooperation with the Electrotechnical faculty in Sarajevo. The

system supports product development functions, such as product design, tooling, standardization and unification, and calculation of final costs. The system also controls product preparation from order processing to job scheduling. Other functions include product control and electronic mail. Transactions from PRINCE can be used for book-keeping, payroll, and analyses of costs for materials and products. PRINCE uses the TOTAL (CINCOM) data base management system. The system serves multifactory, multiproduct organizations and works with any product structure or production, sales, coding, or purchasing system.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Kemal Taljanovic
(071) 541061

TVORNICA ARMATURA ALIPASIN MOST
Dzemala Bijedica 172
Sarajevo 71000 Yugoslavia

PRO (Process-Oriented Software)

PDP-11 Operating System: Independent

Keywords: • Data collection • Process control

This self-contained package for real-time data acquisition and process control contains its own incremental compiler, on-line editor, operating system, run-time library, and I/O drivers in less than 16K words. Scanning, alarming, and either direct digital or supervisory control are readily invoked on-line, by entering only the required I/O specifications and control parameters, as are algorithms for such functions as digital filtering, lead-lag, and delay time. Special calculations, sequential control, log formatting, special displays, and other user-defined tasks are provided for using an English-based language similar to BASIC, thus enabling system tailoring to specific applications. All user interaction and editing may be done on line using PRO's high-level language. PRO combines ease of use of an interactive interpreter, such as BASIC, with the speed and efficiency of FORTRAN in a system small enough to use PDP-11 or LSI-11 hardware, without memory management or bulk memory, thus minimizing cost and increasing reliability for small systems.

Price: \$5000 - \$7500 +

Contact: Mary T. Gibson
(619) 453-0303

STAFF COMPUTER TECHNOLOGY CORP.
10457-J Roselle Street
San Diego, CA 92121

ProBiz™ Job Costing/Work in Process

PDP-11 Operating System: Micro/RSX

Keywords: • Cost accounting • Inventory • Production control
• Project management

This module uses submodules and programs that place the important details of an active job at your disposal on a regular basis. Five submodules — labor ticket processing, parts, list of materials, operation sheets, and parts inventory — offer the following features:

- A work-in-process (WIP) record is created for each open order. The entry that creates that record references the list of materials (LOM) for the ordered item to build a record composed of labor, operations, and parts. Previous part costs and labor costs, based on standard operation times, are used to establish job cost estimates. An LOM, operations listing, and purchasing LOM (which combines like items) are printed. This program allows a list of materials with up to five levels of indention.
- The file is then sorted, and the WIP file is updated with new information.
- Input to the work in process is provided through the labor ticket, accounts payable, and inventory transactions. Updates occur after a transaction register is printed.
- Reports include WIP, job status, and exceptions (where actual exceeds estimate).
- Changes are permitted to individual work-in-process records.
- Also available are programs to calculate WIP month-end costing for both complete and partial shipments, with posting to the WIP header.
- A CRT display shows the status of any shop order.
- A labor efficiency report highlights the performance of employees against job standards.
- If job requirements change, the job can be updated through an "explosion" process that retains current cost data while allowing new or changed entry items to be added.

A version of this product is available for the A-to-Z system.

Price: \$3500 – \$7000

Contact: D. L. Wyse, Vice President
(513) 890-1800

PROJECTS UNLIMITED, INC.

A Division of Professional Business Software

P.O. Box 14538

Dayton, OH 45414

PRODSTAR-MRP

PRO Operating System: XENIX™

Keywords: • Planning aids • Production control • Scheduling
• Shop floor control

This software package, developed by DIAL, generates its own data base so that every department involved with production accesses common information. PROSTAR-MRP offers the following capabilities: inventory management and bill of materials, machine and labor management, master scheduling, cost accounting, materials requirements planning, and purchasing inquiries and orders. The system provides full integration among bill of materials process, work in progress, inventory control, material requirement planning, and master scheduling. The system does not require a computer specialist but can be operated by engineering and plant staff.

This on-line, menu-driven package reduces batch processing to a strict minimum. The program, written in COBOL, runs on several minicomputers, as well as on the IBM/XT, IBM/AT, HP150, and compatible systems.

XENIX™ is a trademark of Microsoft Corporation.

Price: \$2000 - \$35,000

Contact: John P. Henry
(201) 447-5379

SAT COM

11 Diamond Court, P.O. Box 68
Glen Rock, NJ 07928

Purchase Order and Receiving

PDP-11 Operating System: Micro/RSTS, Micro/RSX, RSTS, RSX

Keywords: • Inventory • Purchasing

This system, developed by MCBA/CSA, allows on-line entry and editing of purchase orders; supports blanket purchase orders; prints purchase orders and scheduled receipts reports by item, vendor, and job; allows on-line entry of receipts; provides vendor performance analysis and on-line cash-requirements inquiry; allows you to report "rejects" at receipt time; notifies you of early and over-/undershipments; supports multiple vendors for an item; allows for preentered table-driven notes and manually entered notes for each purchase order and line item; and interfaces to three other CSA packages.

A version of this product is available for VAX computers.

Price: \$2400 - \$2640

Contact: William Ferris
(203) 735-1819

COMPUTER SOFTWARE ASSOCIATES

366 Main Street, P.O. Box 492
Ansonia, CT 06401

Purchase Order Processing

PDP-11 Operating System: RSX

Keywords: • Order processing • Purchasing

This module processes purchase orders for mailing, tracks open commitments, records material receipts, and prints a variety of reports,

including open P.O. summary, expediting, receiving, and cash requirements. The module can be operated independently or as part of a fully integrated system, interfacing automatically with one or more of the following: accounts payable, for matching invoices to purchase orders and reducing open commitments; inventory control, to increase inventory when material receipts are recorded and to show material on order on inventory reports; and job cost, to reflect open commitments and material receipts on job cost reports. Operation is fully interactive, with reports and video screen displays available on demand.

A version of this product is available for VAX computers.

Price: \$4000

Contact: Janna McMillan

(617) 275-5810

BREUER & CO.

54 Middlesex Turnpike

Bedford, MA 01730

QMS PROGRAMS® Computer Software/Cost of Quality and Material Review

PDP-11 Operating System: Micro/RXS, RSX

Keywords: • Accounting • Financial analysis • Quality control
• Statistics

This integrated set of modifiable modules is for the real-time capture, disposition, summarization, and analysis of quality costs associated with the repair, scrap, and rework arising from nonconformance of incoming and in-process materials to specifications. The user tracks nonconformances to MIL-STD 1520A through the initial detection, recording, preliminary review, and material review board (MRB) disposition. The system accepts costs either automatically from an accounting system or from direct entry and provides both graphical and tabular summaries of quality costs.

A version of this product is available for VAX computers.

Price: \$6000

Contact: Jeffrey A. Gavrich, Director of Sales and Marketing

(609) 924-7904

JOHN A. KEANE AND ASSOCIATES

575 Ewing Street

Princeton, NJ 08540

QMS PROGRAMS® Computer Software/Customer Complaint and Field-Failure Analysis

PDP-11 Operating System: Micro/RXS, RSX

Keywords: • Decision support • Quality control • Statistics

This integrated set of modifiable modules is for the real-time capture, reporting, summarization, and analysis of pack problems, field failure, and customer-complaints data. The user can establish open-ended sets of parameters related causally to defective material and can describe

complaints in terms of quantity, reason, source, and so on. The system also provides Pareto ranking of reasons for complaint, P-charts of complaints to see progress over time, and user-defined tabular listings of detailed results and summary results. Data entry from different market areas, summary reporting of results, and user inquiries can occur simultaneously.

A version of this product is available for VAX computers.

Price: \$8000 – \$21,000

Contact: Jeffrey A. Gavrich, Director of Sales and Marketing
(609) 924-7904

JOHN A. KEANE AND ASSOCIATES
575 Ewing Street
Princeton, NJ 08540

QMS PROGRAMS® Computer Software/Defect Analysis

PDP-11 Operating System: Micro/RXS, RSX

Keywords: • Process control • Quality control • Real time
• Statistics

This data base of integrated, modifiable modules is for the real-time capture, reporting, summarization, and analysis of product and process defect data, permitting the user to establish an open-ended set of parameters related to defective material and to describe defects in terms of quantity, type, location, and so on. The system also provides Pareto ranking of reasons for defects, P-charts of defect percent to see progress results, user-designed tabular listings of detailed results, and user-designed tabular listings of summary results, and frequency of failed parts in total quantity through high-resolution line graphics or ranked by either frequency or accumulated value.

A version of this product is available for VAX computers.

Price: \$8000 – \$23,000

Contact: Jeffrey A. Gavrich, Director of Sales and Marketing
(609) 924-7904

JOHN A. KEANE AND ASSOCIATES
575 Ewing Street
Princeton, NJ 08540

QMS PROGRAMS® Computer Software/Environment

PDP-11 Operating System: Micro/RXS, RSX

Keywords: • Data base management • Environmental
• Quality control • Statistics

This integrated set of modifiable modules is for the real-time capture, reporting, summarization, and analysis of environmental test data. The user can set up applications to monitor air, water, surfaces, and so on for particles, bacteria, humidity, and so forth. The system maintains a schedule for testing; prompts for individual results; flags out-of-specification readings; provides daily, weekly, monthly, and quarterly summaries; and allows the user to access the data base on an inquiry basis

for analysis, troubleshooting, and correlation of results. A variety of sampling devices can be interfaced to provide input from analytical instrumentation.

A version of this product is available for VAX computers.

Price: \$8000 – \$21,000

Contact: Jeffrey A. Gavrich, Director of Sales and Marketing
(609) 924-7904

JOHN A. KEANE AND ASSOCIATES
575 Ewing Street
Princeton, NJ 08540

QMS PROGRAMS® Computer Software/Finished Goods Release

PDP-11 Operating System: Micro/RXS, RSX

Keywords: • Inventory • Materials handling • Quality control
• Real time

This integrated set of modifiable modules is for the real-time management and release of finished goods into inventory. The net result of timely release is fewer complaints, improved customer relations, reduced exposure for product liability, and compliance with regulatory requirements. Offered are test-saving sampling strategies and reporting mechanisms that zero in on problems and monitor performance by operator, line, or plant. Cross-correlation techniques are performed to reduce testing.

A version of this product is available for VAX computers.

Price: \$12,000 – \$21,000

Contact: Jeffrey A. Gavrich, Director of Sales and Marketing
(609) 924-7904

JOHN A. KEANE AND ASSOCIATES
575 Ewing Street
Princeton, NJ 08540

QMS PROGRAMS® Computer Software/Instrument Calibration

PDP-11 Operating System: Micro/RXS, RSX

Keywords: • Decision support • Instrumentation
• Property maintenance • Quality control

This integrated set of modifiable modules is for the real-time management of equipment calibration programs, allowing the user to establish testing protocols for equipment classes and to set schedules for each item in the program. The system provides a due list of items to be checked in the current time period, prompting for actual test results; a comparison of results against allowable limits; and a history for each item in the program, including actual measurements, status of checks due, detection of adverse trends, determination of optimal frequency of inspection, and labor hours for the program.

1044 Manufacturing

A version of this product is available for VAX computers.

Price: \$13,000 – \$46,000

Contact: Jeffrey A. Gavrich, Director of Sales and Marketing
(609) 924-7904

JOHN A. KEANE AND ASSOCIATES
575 Ewing Street
Princeton, NJ 08540

QMS PROGRAMS® Computer Software/Logistics

PDP-11 Operating System: Micro/RXS, RSX

Keywords: • Materials handling • Process control
• Quality control • Scheduling

This integrated set of modifiable modules follows lots through alternate stages of manufacture and testing over a period of days, weeks, or months; the system can be used as a PERT scheduling device or can be used to ensure timeliness in periodic testing. The program provides a real-time environment for lot schedules, lot-completion dates, automatic notification of potential bottlenecks, detection of delays, identification of critical-path items, built-in consistency checks to prevent mistakes, provision for external checks to guarantee integrity of results, an on-line informational data base for immediate access to information, interactive dialog for selective display of pertinent data, and user design of logic to obtain exact compatibility.

A version of this product is available for VAX computers.

Price: \$10,000

Contact: Jeffrey A. Gavrich, Director of Sales and Marketing
(609) 924-7904

JOHN A. KEANE AND ASSOCIATES
575 Ewing Street
Princeton, NJ 08540

QMS PROGRAMS® Computer Software/Materials

PDP-11 Operating System: Micro/RXS, RSX

Keywords: • Data base management • Quality control
• Real time • Statistics

This data base of integrated, modifiable modules is for the identification of raw materials by product, subclass, source, line, date, shift, lot number, and so on. The system permits the real-time capture, materials evaluation, summarization, analysis, rapid release, and graphic/tabular historical reporting on incoming raw materials, allowing the user to get specifications and acceptance criteria according to MIL-STD 105D and 414 or modified plan for each characteristic to be tested. The system computes sample sizes upon the inspector's entry of lot size and prompts for terminal data entry (or entry from automated test equipment) by characteristic, with extreme values being automatically questioned. Lot results are compared with acceptance criteria, and real-time accept/reject determinations are made.

A version of this product is available for VAX computers.

Price: \$8000 - \$31,000

Contact: Jeffrey A. Gavrich, Director of Sales and Marketing
(609) 924-7904

JOHN A. KEANE AND ASSOCIATES
575 Ewing Street
Princeton, NJ 08540

QMS PROGRAMS® Computer Software/Optimum Inspection Strategies

PDP-11 Operating System: Micro/R SX, RSX

Keywords: • Data base management • Modeling/simulation
• Production control • Quality control

This system allows the user to try any number of testing plans on actual history to establish the economical optimum approach for each product and purchased material while maintaining acceptable confidence levels. The system automatically generates an operating curve once given a sample size and acceptance number and allows comparison of variable and attribute acceptance plans. Graphical output is provided. This module operates in a multiuser environment, permitting access and other functions to occur simultaneously from the same integrated, shared data base.

A version of this product is available for VAX computers.

Price: \$10,000 - \$21,000

Contact: Jeffrey A. Gavrich, Director of Sales and Marketing
(609) 924-7904

JOHN A. KEANE AND ASSOCIATES
575 Ewing Street
Princeton, NJ 08540

QMS PROGRAMS® Computer Software/Process Capability Studies

PDP-11 Operating System: Micro/R SX, RSX

Keywords: • Process control • Quality control • Real time
• Statistics

This integrated set of modifiable modules is designed to maintain a complete history of test results. The program allows the user to obtain overall-process average, overall-process standard deviation, smallest variate, largest variate, range, six sigma band, ratio of six sigma band to specification range, within-lot (set) sigma, and between-lot (set) sigma and to calculate C, Cp, and Cpk. Thus, one can compare actual performance of a vendor, internal process, or finished product to required performance specifications. These operations can occur simultaneously as other functions from a common data base.

A version of this product is available for VAX computers.

1046 Manufacturing

Price: \$8000 – \$21,000

Contact: Jeffrey A. Gavrich, Director of Sales and Marketing
(609) 924-7904

JOHN A. KEANE AND ASSOCIATES

575 Ewing Street
Princeton, NJ 08540

QMS PROGRAMS® Computer Software/Product Shelf Life and Stability

PDP-11 Operating System: Micro/RXS, RSX

Keywords: • Chemical • Pharmaceutical • Quality control
• Statistics

This integrated set of modules is for the real-time management and reporting on product shelf life information. Conforming to GMP/GLP requirements for data integrity in an automated system, the system provides built-in checks ensuring accurate data entry, an audit trail, and password protection. The system interfaces to any number of input devices and provides data product identification entered by dosage form, condition, date, batch testing schedule, reference information, and so on. Pull lists of studies due for testing and related report forms, screening, laboratory calculations, confirmation of acceptance, documentation of results, auditing of events, early-warning detection of trends, statistical analysis of kinetic data (Arrhenius plots), laboratory hours accounting, and sample-label printing are available to the laboratory manager.

A version of this product is available for VAX computers.

Price: \$22,000 – \$40,000

Contact: Jeffrey A. Gavrich, Director of Sales and Marketing
(609) 924-7904

JOHN A. KEANE AND ASSOCIATES

575 Ewing Street
Princeton, NJ 08540

QMS PROGRAMS® Computer Software/Statistical Process Control

PDP-11 Operating System: Micro/RXS, RSX

Keywords: • Process control • Quality control • Real time
• Statistics

This menu-driven, integrated set of modifiable modules is for the real-time capture, detection, summarization, and analysis of process variable and attribute data. The system permits the user to set specifications and targets for process characteristics; prompts for entry from workstations (or accepts automated test equipment data from DECnet, Ethernet, and Baseway); compares present values with targets; and provides real-time feedback of adverse trends to the factory floor, using a cumulative-summation (CUSUM) algorithm, defining real-time shifts in product inspection or in-process data streams, permitting

automatic filtering and recognition of adverse trends with faster responses, fewer false alarms, and higher confidence levels at lower sampling levels. The statistical, current, and historical reporting package includes graphics.

A version of this product is available for VAX computers.

Price: \$8000 - \$58,000

Contact: Jeffrey A. Gavrich, Director of Sales and Marketing
(609) 924-7904

JOHN A. KEANE AND ASSOCIATES
575 Ewing Street
Princeton, NJ 08540

QMS PROGRAMS® Computer Software/Supplier Ratings

PDP-11 Operating System: Micro/RSX, RSX

Keywords: • Data base management • Quality control
• Real time • Statistics

This menu-driven, modifiable module is for rating vendors on the basis of quality and performance criteria, such as defective material, delivery time, in-process failures, repair/rework/scrap quantities, and corrective action response. The system manages a data base of all receiving material results, conforming to MIL-STD 1535, and provides year-to-date ranking of vendors within a classification, monthly exception reports of vendors with unacceptable quality, ratings, and to-date performance reports on each vendor.

A version of this product is available for VAX computers.

Price: \$4000

Contact: Jeffrey A. Gavrich, Director of Sales and Marketing
(609) 924-7904

JOHN A. KEANE AND ASSOCIATES
575 Ewing Street
Princeton, NJ 08540

QMS PROGRAMS® Computer Software/What-If Studies

PDP-11 Operating System: Micro/RSX, RSX

Keywords: • Decision support • Modeling/simulation
• Quality control • Statistics

This integrated set of modifiable modules permits simulation capabilities, a means of mirroring normal behavior or to examine the effects of deviant-process behavior, and a rapid means for testing application setups. The user forecasts by playing what-if games with new-product startups or proposed changes in manufacturing processes, specifications, or reporting schemes, using Monte Carlo techniques to produce data that simulates processes. The user need only set up a basic protocol and supply the name of the product, subclass, and so on. Help screens are always available.

A version of this product is available for VAX computers.

1048 Manufacturing

Price: \$8000 – \$21,000

Contact: Jeffrey A. Gavrich, Director of Sales and Marketing
(609) 924-7904

JOHN A. KEANE AND ASSOCIATES
575 Ewing Street
Princeton, NJ 08540

QUOTE: Manufacturing Cost Estimating

PDP-11 Operating System: Micro/RSTS, RSTS, RT-11

Keywords: • Cost accounting • Financial planning
• Sales and marketing

These 14 programs can be used by either sales or accounting departments. The program QUEST produces a price quote that looks like a financial statement. You enter the number of hours required in six labor categories, as well as the cost of the parts that will be used. The computer then adds engineering, production, sales and G&A overheads, as well as estimated taxes and profit, to compute your selling price. Labor rates and overhead rates are stored in the program and can be changed when needed. This program package is ideal for a job shop.

The program QUOTE2 allows you to determine a standard discount rate for your product line by computing the production learning curve in your shop. The program then computes 17 price breaks covering 1 to 10,000 units. This program also allows you to estimate your competitor's discount schedule.

Other programs in the package compute and print out discount schedules and price breaks for various price curves in the quantities you specify.

The easy-to-use programs are written in BASIC. On-site support is available. A manual is included.

Price: \$350

Contact: Raymond H. Green, President
(813) 360-1967

RAY GREEN AND ASSOCIATES
603 55th Avenue
St. Petersburg Beach, FL 33706

RCS-7

PDP-11 Operating System: RSX

Keywords: • Petroleum • Process control • Real time

This real-time monitor and control system is suitable for SCADA and process control applications. Because of its generic design as a baseline system, RCS-7 is a good solution to monitor and control applications and for systems from PDP-11/23s to dual-redundant VAX-11/780 configurations. RCS-7 provides a user-friendly operator interface for non-programmer users and features color graphics user/machine interface, data acquisition and processing, alarms monitoring, event logging,

supervisory control, on-line display generation and acquisition, and an applications interface.

The optional subsystems offer automatic failover for redundant configurations, a calculation processor, dot-addressable trending, and historical data collection.

A version of this product is available for VAX computers.

Price: \$15,000 – \$60,000

Contact: David J. Osina
(713) 666-2701

SGM, INC.

8830 Interchange Drive
Houston, TX 77054

Real-Aid

PDP-11 Operating System: RSX

Keywords: • Materials handling • Process control • Real time
• Shop floor control

Real-Aid, written in FORTH, provides a framework on which specific applications can be built for real-time control in many environments, such as security systems, data acquisition and recording, materials handling, shop-floor data control, automated warehousing, process control, testing beds, and production line control. Standard facilities are offered for disk and VDU control, simulation, alarm acknowledgment, mimic diagram, communications, alarm display, data acquisition, control output, alarm checking, diagnostics, logging, stand-by, and application logic.

Price: £10,000 – £30,000

Contact: M. J. Bradley
0905 53335

STAVELEY COMPUTING

Blackpole Road

Worcester WR3 8TH England

Real-Time Production Monitoring System

PDP-11 Operating System: RT-11

Keywords: • CAD/CAM • Data collection • Production control
• Shop floor control

This system continuously and automatically monitors the performance of machines, jobs, and operators. Production count is obtained directly from the machine through sensors that indicate that a part has been produced. Unique terminals at each machine provide for communications and down-time control. Real-time VT displays include plant status (running or down and reason) and summaries of down time and production. Output data is provided for production reporting, daywork/incentive measurement, and inventory accounting.

1050 Manufacturing

Price: \$45,000 – \$90,000

Contact: R. Dubner
(914) 948-4300

INFORMATION AUTOMATION INC.

925 Westchester Avenue

White Plains, NY 10604

RSX-620 (IPC 620 CIM to RSX-11M/M-PLUS Communications Support Package)

PDP-11 Operating System: RSX

Keywords: • CIM • Process control • Production control
• Production control

This package allows communication between a PDP-11 computer and one or more Honeywell IPC programmable controllers (IPC 620-10, 620-15, 620-20 and 620-30). The RSX-11M device driver can be assembled and task-built on any PDP-11 computer running an RSX-11M/M-PLUS operating system. The RSX/620 becomes part of the RSX-11 operating system. The communication takes place through the DIGITAL DZ11 or DZQ11 I/O controller board in the PDP-11 and the IPC 620-0042 in the Honeywell programmable controller. Twenty-two-bit Q-bus PDP-11 systems require a DZQ11 interface module; UNIBUS systems require a DZ11.

The RSX/620 driver implements Honeywell's Asynchronous Byte Count (ABC) protocol for all 30 CIM I/O operations in a manner completely transparent to the user. The operations include reading and writing inputs, outputs, and register; uploading/downloading program memory; and flag-mode operation. Since the driver supplies all header trailer characters, the user needs to be concerned only with the message contents. A user-written application program is required to access the functions supported by RSX/620.

Price: \$2500 – \$10,000

Contact: Alan Reigart
(717) 848-1151

**HONEYWELL INDUSTRIAL PROGRAMMABLE
CONTROL DIVISION**

435 West Philadelphia Street, P.O. Box 934
York, PA 17405-0934

Salerno/SPM + (Statistical Process Monitoring)

PDP-11 Operating System: Micro/RSX, RSX

Keywords: • Process control • Quality control
• Shop floor control • Statistics

Salerno/SPM + is a centralized quality management system designed to automate the mathematical and managerial functions of statistical process control for an entire manufacturing facility. Designed for factory floor implementation, this menu-driven system provides an interactive, real-time environment for collecting, monitoring, and

analyzing data for multiple processes simultaneously. Thus, once control limits are established, the system automatically displays a control chart and provides warnings of out-of-control conditions each time a subgroup of inspection data is entered. SPM + supports manual data entry and electronic data acquisition from gauges.

SPM + has powerful "sort and report" capabilities too. All you need to do is identify the process of interest and specify the date window. A data sort is usually accomplished in a matter of seconds. Then SPM + gives you a variety of analytical tools to select from: control charts, frequency distributions, process capability studies, estimates of the mean and the variance, hypothesis tests for mean and variance, and tests for normality.

As a tool for productivity, SPM + will keep track of your efforts to improve a process, help determine the effectiveness of corrective actions, and reduce scrap, rework, and sorting.

A version of this product is available for VAX computers.

Price: \$18,000 - \$45,000

Contact: Sales Manager
(313) 756-9292

SALERNO COMPUTER SYSTEMS
4175 East Ten Mile Road
Warren, MI 48091

Sales Order Processing

PDP-11 Operating System: CTS-300, RSTS

Keywords: • Order processing • Production control
• Sales analysis

This module records a company's sales commitments. A flexible order-entry system permits screens to be tailored so that product characteristics and options are displayed, thus simplifying order input and ensuring accuracy.

The system can handle multiitem scheduled call-off orders and order details. Together with free-format text, those items can be printed on order acknowledgments.

Stock can be allocated with priority for back orders any time prior to delivery. A comprehensive picking list shows requirements and stock availability. The user can confirm the dispatch of a completed picking list in order to automatically update stock and sales order records.

Inquiry and reporting facilities include a search feature for locating order records, a forward-value analysis for cash-flow calculations, and a report for analyzing the order book by part number.

Price: £800 - £2400

Contact: Nicola Nobes
(0276) 76303

CONCEPT COMPUTER SYSTEMS LTD.

Bagshot House, High Street

Bagshot, Surrey GU19 5AF England

SCHED: Manufacturing Scheduling System

PDP-11 Operating System: Micro/RSTS, RSTS, RT-11

Keywords: • Order processing • Production control
• Scheduling • Shop floor control

This sales tracking and production control system provides the status of any job in your manufacturing process. The system, designed primarily for the job lot manufacturer, is ideal for handling up to 2000 work orders or job lots each year but can be modified to handle many more.

All orders are entered when received, and a production work order that starts your process is printed. Due dates for material and three inter-plant departments are assigned. As your product moves through your plant, you enter, on your terminal, the dates work is completed in each department. When units are shipped, the accounting department enters those units from their invoices, along with the value. When a job lot is completed, the value of the lot is checked against the lot value recorded on the original order entry.

Monthly reports can list orders received, units shipped, the value of work in process for each month it is due, and the total value of work in process. You can also look up the status of any job in your plant or print out a listing of the status of the jobs in your plant.

Other options allow you to look up by customer name the status of the jobs in the plant for that customer and to look up orders by customer purchase order number. You can also print a report of the percentage of on-time versus late shipments.

These programs are written in BASIC. A user's manual is also provided, and on-site support is available.

Price: \$1950

Contact: Raymond H. Green, President
(813) 360-1967

RAY GREEN AND ASSOCIATES

603 55th Avenue

St. Petersburg Beach, FL 33706

SCORE (Supervisory Control of Refrigeration Equipment)

PDP-11 Operating System: MicroPower/Pascal, RT-11

Keywords: • Data collection • Energy • Process control
• Telecommunications

Memory required: 256KB.

The SCORE operating system, written in FORTRAN IV and Pascal, is a menu-driven turnkey software package that does complete control and monitoring of a refrigeration plant. Features include compressor

sequencing, condenser control, defrost control, liquid recirculation control, and pressure/temperature monitoring. Log reports are generated, based on time or alarm or both. System setpoints and manual overrides are entered through menu selections. Additional features include remote monitoring and control by using modem and autodialing.

Price: \$500 – \$50,000

Contact: Art Marshall
(717) 767-6411
FES, INC.
P.O. Box 2306
York, PA 17405

SETCON: Process Control Software for Industrial Processes

PDP-11 Operating System: Micro/RXS, RSX

Keywords: • Graphics • Process control • Real time
• Shop floor control

Memory required: 512KB to 2MB.

This data acquisition and control package, written in FORTRAN and developed for industrial applications, runs in both distributed and centralized architectures under real-time operating systems. SETCON has a memory-resident data base and uses an 8-color CRT as an interface between the user and the process. Two-level password security is built in to protect the system from modification by unauthorized personnel. SETCON functions include process control algorithms, application programming support, group and event scheduling, operator console functions, user-defined displays, an event-history subsystem, historical trending and averaging, reporting and plotting, the automated batch process control package ABCON, and support for many process I/O devices.

This field-proven product has more than 150 installations worldwide.

A version of this product is available for VAX computers.

Price: \$15,000 – \$60,000

Contact: James E. Apple
(713) 496-3220
SETPOINT, INC.
950 Threadneedle
Houston, TX 77079

SFC (Shop Floor Control), MCBA, Inc.

PDP-11 Operating System: CTS-300, Micro/RXS, RSTS, RT-11, XENIX™

Keywords: • Planning aids • Scheduling • Shop floor control

This stand-alone application is a comprehensive and practical tool for creating and monitoring shop orders and shop floor activity. In addition to interactive entry and editing of shop orders, SFC supports shop bills and shop routings; provides not only operation-level controls but also

forward, backward, and manual scheduling of shop orders down to the operation level; provides capacity-requirements planning and exception reporting to highlight problem areas in the shop; records scrap and rejects; accommodates shop notes; records and accumulates actual material and labor hours used; prints a dispatch list; allows multiple shop orders to be directly connected to a job; supports a daily calendar in month-day-year format cross-referenced to shop days; interfaces to six other packages in MCBA's manufacturing system; and supports security and multicompany capabilities.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$4000 - \$6000

Contact: Sales Representative

(818) 957-2900

MCBA, INC.

2441 Honolulu Avenue

Montrose, CA 91020

Shop Floor Control

PDP-11 Operating System: Micro/RSTS, Micro/RXS, RSTS, RSX

Keywords: • Cost accounting • Production control
• Scheduling • Shop floor control

This system, developed by MCBA/CSA, provides interactive entry and editing of shop orders; supports standard shop bills and shop routings; provides operation-level controls; records scraps and rejects; accommodates shop notes; records and accumulates actual material used and labor hours expended; provides forward, backward, and manual scheduling of shop orders down to the operation level; provides capacity requirements planning; prints a dispatch list; provides exception reporting to highlight problem areas in the shop; allows multiple shop orders to be directly connected to a job; supports a daily shop calendar; and interfaces to six other CSA packages.

A version of this product is available for VAX computers.

Price: \$3100 - \$3410

Contact: William Ferris

(203) 735-1819

COMPUTER SOFTWARE ASSOCIATES

366 Main Street, P.O. Box 492

Ansonia, CT 06401

Shop Floor Data Collection

PDP-11 Operating System: Independent, RSX, RT-11,
TSX-PLUS™

Keywords: • Data collection • Production control • Real time
• Shop floor control

Memory required: 128K.

Shop Floor Data Collection uses bar coded employee badges and shop floor documentation. The system, written in DIBOL, captures real-time data for time and attendance (clock card replacement), job costing, material movement, and job progress.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$2000 – \$6000

Contact: S. J. Haseldine

EVETS COMPUTERS LTD.

123 – 125 Green Lane

Derby DE1 1RZ England

Shop Schedule and Machine Loading

PDP-11 Operating System: CTS-300, RSTS, RT-11

Keywords: • Inventory • Production control • Scheduling
• Shop floor control

This system is a simple yet sophisticated means of scheduling a manufacturing operation and keeping track of the factory workload at the same time. This stand-alone software, written in DIBOL, is intended for the manufacturer who is running many jobs simultaneously. The software keeps track of jobs, work centers, and time and prints or displays the following:

- A detailed schedule by work center, week, and job in a handy format for the factory floor supervisor
- A 1- or 2-page summary report showing the factory workload in work hours by work center and by week for one or more 10-week periods
- A job report showing the operations, time required, and work remaining to be done on each job
- A report that values the work-in-process inventory
- An inquiry capability by terminal so that the status of a given job can be displayed

Upon completion of the job, the schedule records may be kept and compared to the actual time taken. This process produces a continuing job time and average cost record, by part number, for continuing use and analysis.

This easily installed system is not dependent on the installation of other manufacturing applications.

A version of this product is available for VAX computers.

Price: \$2500 – \$5000

Contact: Ralph Spofford
(603) 526-4000

ADMINISTRATIVE PRODUCTIVITY, INC.

Scytheville Row, P.O. Box 302

New London, NH 03257

SPC (Standard Product Costing), MCBA, Inc.

PDP-11 Operating System: CTS-300, Micro/RXS, RSTS, RT-11,
XENIX™

Keywords: • Cost accounting • Purchasing

This comprehensive interactive tool accurately maintains standard or estimated costs for both manufacturing and accounting management. SPC keeps up-to-date costs for all products, parts, and services provided by a company. Deviations of costs from planned objectives are identified for management. Since SPC is integrated with MCBA's Inventory Management and Standard Product Routing packages, labor and material figures are automatically kept consistent.

SPC speeds installation by automatically creating the initial-cost master file from the item master file; maintains both beginning-of-the-year cost projections (standard) and up-to-date (current) costs; maintains value-added costs at each level of the bill of material and accumulates costs from lower levels of the bill of material; separates both standard and current costs into material, labor, fixed burden, and variable burden; handles multiple departments and work centers with flexible, user-defined tables to define overhead, labor grades, locations, job and cost types, and various status codes; calculates labor for each operation for each item, using the standard routing; uses the current bill of material to build up costs for user-selected items; provides costed bill of material reports in single-level, indented, and summarized formats; provides critical ratios, such as gross-margin percentages and cost variances; facilitates what-if cost analysis; highlights current purchase prices deviating from the standard material costs on the Purchase Price Variance Report; replaces standard costs with current costs for all or selected items; interfaces to four other MCBA packages; and supports multiple companies and password security.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$2500 - \$4000

Contact: Sales Representative

(818) 957-2900

MCBA, INC.

2441 Honolulu Avenue

Montrose, CA 91020

Spider II Manufacturing Planning and Control System

PDP-11 Operating System: RSTS

Keywords: • Cost accounting • Planning aids

• Production control • Shop floor control

This fully interactive closed-loop manufacturing control system encompasses production planning, production control, material planning, material control, and cost control. The system's modular approach allows the user to purchase only the applications required.

Spider II can also expand into a fully integrated accounting and manufacturing system.

A version of this product is available for VAX computers.

Price: \$1600/module – \$7500/module

Contact: Uniq Sales Department
(312) 879-1008

UNIQU DIGITAL TECHNOLOGIES
28 S. Water Street
Batavia, IL 60510

SPR (Standard Product Routing), MCBA, Inc.

PDP-11 Operating System: CTS-300, Micro/RSX, RSTS, RT-11,
XENIX™

Keywords: • Process control • Production control

This package creates, maintains, and reports data describing operations, tools, and notes used in standard product manufacturing. SPR, sometimes referred to as the bills-of-labor package, is oriented toward small to medium-size repetitive manufacturers (make-to-stock/assemble-to-order) and small to medium-size job shops (make-to-order/engineer-to-order).

SPR takes advantage of space-saving techniques, such as general routings and specific routings. General routings are subsets of operations, tools, and notes that are common to more than one product. Specific routings identify sets of operations, tools, and notes that are used to manufacture products. In SPR, several products or items can use the same routing. Specific routings are complete routings (the route or path a shop order travels when being manufactured) and can incorporate general routings.

SPR accesses all features through menus. SPR can also allow interactive entry and editing of routing data and provide for alternate routings; maintain labor standards at the operation level; support "same-as-except" routings, a way of easily creating a new routing by copying another, and allow routings to be copied into a shop order in MCBA's shop floor control package; support many operation types, including productive (most common), setup, move, rework, and so on; provide routings for multiple locations for each item, tooling information control, and standardization of multiusage operations; facilitate higher accuracy of standards by allowing user-specified location of the decimal point in critical fields; support the user in tailoring standard hours, by piece, by 10 pieces, by 100 pieces, and so on, or n pieces an hour; store notes by operation, which can be used for operational instructions; print routing sheets, routing summary sheets, and the general routing usage report; interface to four other packages in MCBA's Manufacturing System; and support multicompanies and password security.

XENIX™ is a trademark of Microsoft Corporation.

1058 Manufacturing

A version of this product is available for VAX computers.

Price: \$1500 – \$2500

Contact: Sales Representative
(818) 957-2900

MCBA, INC.
2441 Honolulu Avenue
Montrose, CA 91020

Standard Product Costing

PDP-11 Operating System: Micro/RSTS, Micro/RSX, RSTS, RSX

Keywords: • Cost accounting

This system, developed by MCBA/CSA, maintains two sets of costs: beginning-of-year cost projections (standard) and up-to-date (current) costs. The program separates both standard and current costs into material, labor, fixed burden, and variable burden; handles multiple departments and work centers, with flexible user-defined tables for overhead labor grades, locations, job and cost types, and various status codes; calculates labor for each operation, for each item using the standard routing (if available); uses the current bill of materials to build up costs for user-selected items; provides costed bill of material reports in single-level, indented, and summarized formats; produces purchase price variance and cost of goods sold reports; and interfaces to four other CSA packages.

A version of this product is available for VAX computers.

Price: \$3000 – \$3300

Contact: William Ferris
(203) 735-1819

COMPUTER SOFTWARE ASSOCIATES
366 Main Street, P.O. Box 492
Ansonia, CT 06401

Standard Product Routing

PDP-11 Operating System: Micro/RSTS, Micro/RSX, RSTS, RSX

Keywords: • Cost accounting • Shop floor control

This system, developed by MCBA/CSA, allows entry and maintenance of routing data (operation, tools, notes, and pointers) to general routings; maintains labor standards of operation level; supports "same-as-except" routings, which is a way of easily creating a new routing by copying another; provides for alternative routings; supports multiple operation types; provides for multiple locations for an item; provides tooling information control; facilitates higher accuracy of standards by allowing user-specified location of the decimal point in critical fields; stores notes by operation that can be used for operational instructions; prints routing and routing summary sheets and a general routing usage report; and interfaces to three other CSA packages.

A version of this product is available for VAX computers.

Price: \$1350 - \$1485

Contact: William Ferris
(203) 735-1819

COMPUTER SOFTWARE ASSOCIATES
366 Main Street, P.O. Box 492
Ansonia, CT 06401

TEC Manufacturing System

PDP-11 Operating System: RSTS, RT-11

Keywords: • Bill of materials • Inventory • Production control
• Purchasing

This on-line, interactive, integrated manufacturing information and financial control system is for job shops and make-to-stock companies. The system automates inventory control, bill of materials, production (job shop) control, shop floor data collection, purchasing, material requirements planning, order entry/invoicing, accounts receivable, sales analysis, accounts payable, general ledger, and payroll. The system provides the necessary tools to help companies maintain control over company resources through improved information handling in order to remain competitive, improve productivity, and maximize customer service.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Karen Kleinman
(617) 964-3890

TEC COMPUTER SYSTEMS, INC.
30 Tower Road
Newton, MA 02164

TMS/2000 Tool Management System

PDP-11 Operating System: RSX

Keywords: • Inventory • Materials handling • Metals
• Scheduling

TMS/2000, an inventory management system for the metalworking industry, controls cutting tools and processes the issue, tracking, and return of cutting tools from the tool storeroom. TMS/2000 issues packages of tools for specific manufacturing tasks, such as bill of tools. The bill of tools function allows planners to check the inventory status of all tools on the bill of tools prior to scheduling the job. Programs for allocation, issue, and return of the bill of tools make handling of BOTs easy and efficient.

TMS/2000 checks inventory levels in the tool crib. When inventory levels reach reorder point, the system generates a requisition of tools to be ordered, by vendor. Once a purchase order number is assigned, TMS/2000 tracks the purchase order until received.

1060 Manufacturing

A complete menu of management reports is available for tracking and managing inventory. DATATRIEVE is the report generator and creates additional reports.

A version of this product is available for VAX computers.

Price: \$28,500 – \$68,500

Contact: Ronald C. Hutton, Sr., Systems Sales Manager
(215) 797-6600

STANLEY VIDMAR INC.

Division of The Stanley Works

11 Grammes Road, P.O. Box 1151
Allentown, PA 18105

Tool Inventory

PDP-11 Operating System: Micro/RXS, RSX, ULTRIX-11

Keywords: • Inventory • Project management • Scheduling
• Shop floor control

This system handles the maintaining, reserving, requisitioning, receiving, transferring, adjusting, issuing, returning, and disposition of manufacturing tools in multiple tool cribs. The system also reports the supply, usage, activity, value, condition, and location of tools used in the manufacturing process. Tool costs can be charged to the using work center. Tools can be put into kits, where they are maintained, reserved, issued, and returned. The following inquiries are available to display tool information: Tool Crib Transaction Inquiry, Tool Crib Usage Inquiry, Requisition Inquiry, Employee Inquiry, and Tool Code Inquiry.

A version of this product is available for VAX computers.

Price: \$1000 – \$2500

Contact: Arthur Martin
(203) 671-6563

COMPUTER COVENANT CORP.

790 Farmington Avenue
Farmington, CT 06032

UCC-APT (Automated Program Tools)

PDP-11 Operating System: RSX

Keywords: • Numerical control

The UCC-APT NC/CNC programming system provides tools for doing highly complex multiaxis contouring work or 2-axis positioning. The system features full multiaxis capabilities, a lathe module to simplify lathe programming, extensive geometric definition facilities, complete control over cutter motion, and both general and custom postprocessors.

UCC-APT is available in two upward-compatible configurations. The Intermediate Level serves as the foundation of CIMCO's parts programming product line and provides the capabilities to program cutter motions relative to 2-dimensional geometry in any nonvertical plane.

This level also contains a series of enhancements and programming aids to simplify the logical requirements of more elaborate part configurations. Included as part of the geometry facilities is a 2-D TABCYL definition. Advanced UCC-APT contains all the features of the Intermediate Level, as well as a full complement of multiaxis support capabilities.

An optional Lathe Module can be added to either level of UCC-APT. That module simplifies programming for lathe parts by using short-cut, shop-type terminology to reduce the coding effort. Roughing, threading, and finishing routines are provided.

The optional NC PLOT II module provides cutter location plotting, allowing an in-depth preview of machining operations before tape is punched.

The postprocessors accept the UCC-APT-created cutter location file as input and produce a machine control tape for a specific machine tool/control unit. Both custom and generalized postprocessors are available.

A version of this product is available for VAX computers.

Price: \$25,000 - \$50,000

Contact: Earl White
(214) 255-3124

COMPUTER INTEGRATED MANUFACTURING CO.
106 Decker Court, Suite 300
Irving, TX 75062

UCC/CAM 100

PRO Operating System: P/OS

Keywords: • CIM • Numerical control • Shop floor control

This combination of software and hardware is designed to improve your productivity as a manufacturer preparing NC/CNC tapes. The software is provided in three modules. One is standard and the others are optional. The standard package consists of editing and backplotting routines, with the editor handling the task of creating machine tapes.

If you need even greater increases in productivity, the Lathe Mill options provide a programming system that is economical, versatile, and easy to use. Using familiar shop terminology, you can create complete work-piece programs. Part roughing and finishing are easily handled, and such functions as threading, drilling, and boring can be processed without defining any geometry.

To produce tapes for the desired machines, you use the provided auxiliary files that describe the various machine/control combinations in your shop. These files are created by answering a series of questions about each machine/control system you plan to program. Once the questions have been answered and the file permanently stored, your NC/CNC machines can be readily programmed.

1062 Manufacturing

Price: \$3000 - \$20,000

Contact: Earl White

(214) 255-3124

COMPUTER INTEGRATED MANUFACTURING CO.

106 Decker Court, Suite 300

Irving, TX 75062

WWRAP (Wire Wrapping for Semiautomatic Machines)

PDP-11 Operating System: CTS-300, IAS, RSTS, RSX, RT-11

Keywords: • CAD/CAM • Electrical

This interactive general-purpose program produces control media for semiautomatic wire wrapping machines. Output for other wiring applications, such as Stitch-wire, Quick Connect, and Multiwire, can also be produced.

Data can be entered directly through the keyboard of the VDU when in the interactive mode; or, the program can be interfaced to access data from a CAD-produced file. The program is menu driven, so an individual needs no prior knowledge of computers or programming to achieve successful results. Powerful editing facilities are available.

The package also comprises a master file in which the geometric definitions of sockets and complete boards in constant use can be stored. The storing of standard board geometry in the master file and the format of data entry are compatible with the program AWRAP for Gardner-Denver 14FV and 14FS automatic wire wrapping machines.

Program features include level assign; point-to-point, right-angle, or routed wiring; area routing using NOGO areas, channels, and routing points; IC pin/board location cross-reference; a master file for storing standard boards and ICs; a plot of board geometry and IC placement; a choice of wiring machine control media; a wrap count and wire length summary; a string list or from/to input; single and twisted-pair wiring; wire grouping and choice of wiring order; and inch/metric input and output.

A version of this product is available for VAX computers.

Price: £12,500

Contact: K. E. Cole

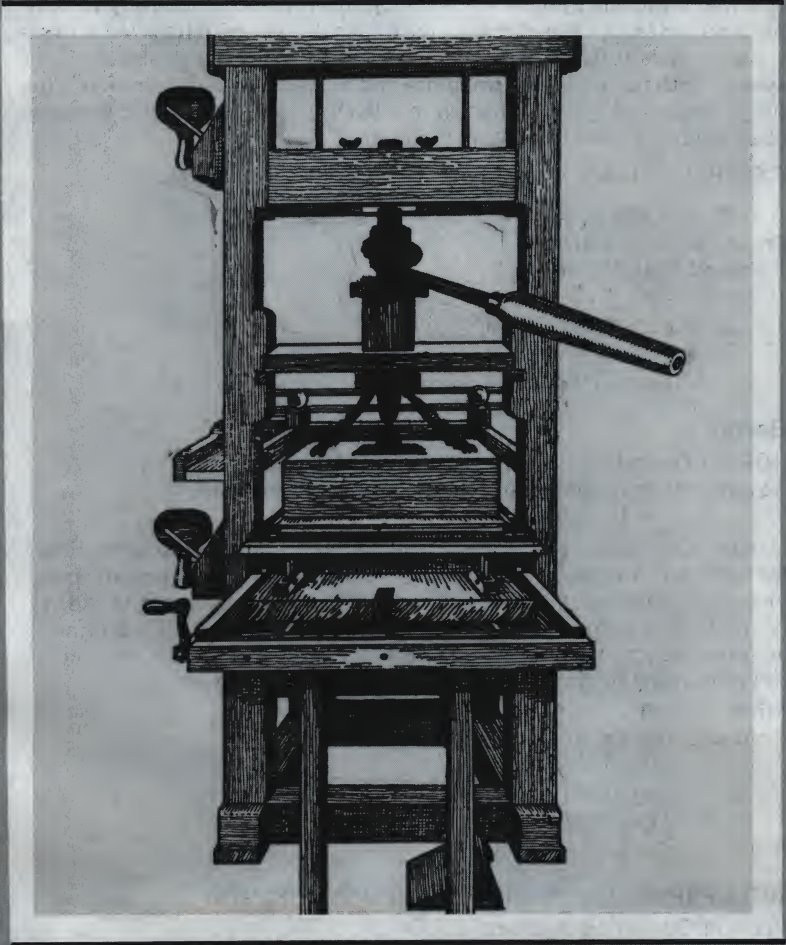
0905 53335

STAVELEY COMPUTING

Blackpole Road

Worcester WR3 8TH England

Media



AdA — Advertising Agency System

PDP-11 Operating System: CTS-300, RSX, RT-11, TSX-PLUS™

Keywords: • Accounting • Advertising/promotion • Billing
• Production control

Memory required: 128K.

AdA handles the two main elements of the work of an advertising agency: production and media. The production module monitors job costing and recording details of all time worked, purchase orders issued, and costs accrued against studio jobs. The media module handles the buying and control of advertisement space in publications. An optional planning system allows the planning and scheduling of complete advertising campaigns. Open-item sales and purchase ledger systems are also fully integrated with AdA, as well as a nominal ledger system with management accounts and balance sheet generation. This fully integrated system, written in DIBOL, handles almost all aspects of an agency's work from start to finish.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$6000 – \$20,000

Contact: S. J. Haseldine

—
EVETS COMPUTERS LTD.

123 – 125 Green Lane

Derby DE1 1RZ England

Barter

PDP-11 Operating System: RT-11

Keywords: • Accounting • Advertising/promotion
• Broadcasting

Barter is an accounting system that keeps track of trade advertising for radio and TV stations. Contracts for advertising, compensating services, and products provided by the advertiser are entered into the system. Barter generates reports by advertiser, by the amount of advertising provided, by the amount of goods or services used, and by the remaining balance due the station or the advertiser.

Price: \$2000

Contact: Lee Facto

(914) 723-8567

RADIO COMPUTING SERVICES

2 Overhill Road, Suite 315

Scarsdale, NY 10583

BRLLP (Print-Out Braille Conversion Program)

PDP-11 Operating System: RSX

Keywords: • Presentation aids • Printing

Memory required: 14KW.

The cost of commercial Braille line printers can range up to \$20,000. Therefore, potential users who are blind or employers of the blind may be interested in the short FORTRAN Braille-Generating Program. Three-ply paper can be used on a DECwriter, or 2-ply paper can be used on an impact drum printer to receive the Braille output when the period character is embossed. The multiply paper provides enough cushioning to produce a light but readable Braille, without the need for expensive modifications to existing output equipment. DECUS number 11-509.

A version of this product is available for VAX computers.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Broadcast Management

PDP-11 Operating System: RSTS, RSX

Keywords: • Accounts receivable • Billing • Broadcasting
• Sales and marketing

Broadcast Management, a powerful yet flexible traffic system with versions for both radio and TV, is capable of running multiple stations on one computer. A 20-week inventory is maintained. Schedules and logs are reconciled daily. Flexible commercial order instructions allow salespeople a wide range of sales options, including vertical and/or horizontal rotations. Copy rotation is automatic. PSAs and promos are easily scheduled, as are orders from national reps. Invoices and accounts receivable are generated automatically. The system is fully integrated with CMC's standard accounting packages or is adaptable to other systems. Full management reports follow every phase of the system.

Newsroom word processing is also available and includes teleprompting for TV and a radio control-room terminal for instant news access.

Price: \$2500

Contact: John Griffith
(208) 524-2622

COMPUTER MANAGEMENT CENTER, INC.

P.O. Box 2103

Idaho Falls, ID 83401

Circulation Management

PDP-11 Operating System: RSTS, XENIX™

Keywords: • Billing • List processing • Publishing

This package for publishers of serial publications is driven by user-defined system tables. Once tables are established, data entry provides a large file of new subscribers, which is merged into an existing subscriber file in batches. The system can design and produce billings, renewal notices, gift letters, and mailing labels. Other features include credit card capabilities, foreign subscriptions, multiple-publication

data entry, and a built-in interface with the NMI Complete Accounting Package.

XENIX™ is a trademark of Microsoft Corporation.

Price: \$1495

Contact: Angus Murphy
(215) 822-2407

NORTON-MURPHY INTERNATIONAL, INC.
176 Chalfont Road
Chalfont, PA 18914

CMS-11 (Circulation Management System)

PDP-11 Operating System: RSTS

Keywords: • List processing

This complete subscription fulfillment software includes ABC/BPA reporting, financial reports, and promotion analysis.

A version of this product is available for VAX computers.

Price: \$10,000 - \$30,000

Contact: Paul B. Webster, President
(213) 577-7433

ALCOR FINANCIAL SERVICES, INC.
1981 E. Locust Street
Pasadena, CA 91107

CMS (Cable Television Management System)

PDP-11 Operating System: CTS-300, RSTS, RT-11

Keywords: • Billing • Broadcasting • Data base management
• Telecommunications

This interactive on-line system for cable television system operators is built around a Subscriber Master File for adding, changing, deleting, or listing subscribers. A Subscriber List may be obtained in total or on a selected basis — type of service, installation date, paid-through date, method of payment, and geographic location.

The system capabilities include an alphabetical listing of subscribers, automatic assessment of monthly and yearly charges for any number of basic or pay TV services, bank draft preparation for each bank for bank draft subscribers, interactive entry and editing of new charges and payments, printing of past-due notices for delinquent subscribers, generation of statements for selected subscribers, account status on video terminal and obtaining a printed copy on request, printing of welcome letters and subscriber account cards on request, and tracking converter serial numbers by subscriber.

The system generates reports and a charge/payment register by late charges, disconnect, street, daily cash receipts, weekly, and installer's productivity. The system also interfaces with addressable converters and taps manufactured by a number of major suppliers to the cable

television industry, including Jerrold, Scientific-Atlanta, Pioneer, and Magnavox.

A version of this product is available for VAX computers.

Price: \$15,000 +

Contact: Larry Edwards, President
(803) 297-9290

BUSINESS SYSTEMS, INC.

One Marcus Drive

Greenville, SC 29615

Cybergraphic Integrated Software

PDP-11 Operating System: Micro/RSX, RSX

Keywords: • Production control • Publishing

Memory required: 4MB.

This integrated software, written in Pascal, includes sophisticated newspaper applications, such as editorial, classified, production, Lay-out 80, page makeup, display ad, wire service, and book pagination; and magazine applications, such as shape setting, sector and pair kerning, copyfitting, and help windows. Communication protocol includes RS232, SDLC, and dial-up diagnostics.

A version of this product is available for VAX computers.

Price: \$100,000 +

Contact: Ron Hoolahan or Ruta Medina
(805) 495-4886

CYBERGRAPHIC SYSTEMS INC.

3366 Thousand Oaks Boulevard

Thousand Oaks, CA 91362

Dovetail Journal Publisher

PDP-11 Operating System: RSTS

Keywords: • Accounting • Advertising/promotion • Publishing
• Sales analysis

The DOVETAIL Journal Publisher, which keeps the books for publishers of periodicals, comprises two independent subsystems: Subscriptions and Advertising. The Subscriptions system maintains the subscriber file, sends multiple expiration notices, receives cash, prints labels, and generates postal reports by zone. The Advertising system maintains and prints placement schedules; generates receivables; reports sales by date, page, salesperson, and customer; receives cash; generates accounting reports, invoices, and statements; and calculates and reports commissions by salesperson. Both systems use powerful query programs to lead the user through the data base of account and subscriber histories. Both modules are also available separately.

A version of this product is available for VAX computers.

Price: \$16,000

Contact: Thomas Considine
(617) 484-6814

CONSIDINE DIGITAL SYSTEMS

490 Trapelo Road
Belmont, MA 02178

Duxbury Braille Translator

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Data conversion • Education • Printing
• Translators

Memory required: 56K.

This system automatically produces braille from print and print from braille. The translator enables blind students and professionals to prepare and access material on the same basis as their sighted colleagues.

The operation of a braille translation system consists of three steps. The first, entering braille or print material, is accomplished by the operator typing on a standard print, voice, or braille-oriented terminal. It is also possible to read print automatically through an optical character reader and to access material already available from other computer sources. The second step, the translation, is usually fully automatic. The final step is to send output automatically to one or more suitable devices, such as video displays, printers, embossers for zinc plates, direct paper embossers, or portable braille display machines.

The computer hardware required can range from mainframes or mini-computers to portable microcomputers. Other computer applications can run on the same equipment in all cases. Duxbury Systems has installations worldwide, producing grade 2 braille in English, with variations for American, British and Halifax mathematics usage, Spanish, Afrikaans, and Arabic, as well as grade 1 braille in those and several other languages.

Price: \$9900

Contact: Joseph Sullivan
(617) 263-7761

DUXBURY SYSTEMS, INC.

77 Great Road
Acton, MA 01720

FACS — Newspaper Circulation and Accounts Receivable

PDP-11 Operating System: RSTS

Keywords: • Accounts receivable • Billing • Distribution

This comprehensive newspaper distribution system centers on the Total Market Coverage concept. The software combined with the FACS Newspaper Accounts Receivable system and the rest of the FACS general accounting packages will give any small to medium-size newspaper a complete financial management system. The system features interactive components that include subscriber, carrier, and district

manager name and address files; full production reporting, draw calculation, carrier billing, and carrier promotions; conformance to Audit Bureau of Circulation (ABC) standards; 10 demographic codes in the subscriber master file; automatic restarts for subscriber interrupts and automatic stops on expiration date; a mail subscriber capability and user-defined reporting capabilities with selectivity; and carrier A/R handling.

The FACS Newspaper Accounts Receivable package features generation and proofs for invoices, cash receipts, adjustments, month-end customer statements, and aged trial balance in addition to sales analysis reports; multiple-publication reporting (for example, daily, Sunday only, and weekly); multiple ad types (display, classified, national, and so on); individual customer contract maintenance; customer earned rate computation and customer activity inquiry; and credit reporting and customer late notices. All reports can be printed to the screen or to a hard-copy device.

A version of this product is available for VAX computers.

Price: \$7500 – \$15,000

Contact: Steven L. Buth

(509) 624-4248 or (800) 824-9631

SPOKANE COMPUTER SERVICES, INC.

West 915 Second Avenue

Spokane, WA 99204

KEREN

PDP-11 Operating System: RSTS, RT-11

Keywords: • Accounting • Data collection • Inventory
• Printing

This third-generation printing management system is designed for the small, medium, or large-size printing or graphic arts-related industry. Applications include estimating/quotation, order entry, loading/scheduling, automatic data collection, work-in-process analysis, costing, productivity and profitability analysis, inventory, invoicing, accounting, sales analysis, and custom report generation. These applications are fully integrated and enable the user to customize the system.

KEREN features data base structured design, friendliness, ease of use, customization capabilities, integration, computer-generated intelligence, speed, custom-report generation, and touch-screen technology. Telephone hot-line, modem, and on-site support are provided, as well as ongoing classroom training and user groups.

A version of this product is available for VAX computers.

Price: \$10,000 – \$50,000

Contact: Mike Mellusi

(201) 574-0400

POLYCHROME CORP., SYSTEMS DIVISION

160 Terminal Avenue

Clark, NJ 07066

MACROCAT

PDP-11 Operating System: RSX

Keywords: • Documentation tools • Foreign language translation
• Presentation aids • Word processing

WCC MACROCAT software is designed for use in translating foreign language documents. This tool for CAT (computer-aided translation) is used by human translators to increase productivity during the translation process. Software is available to translate English to Spanish, German, French, Portuguese, and Arabic. Software is also available in the following language directions: Spanish to English, German to English, and French to English. Software to accommodate Italian and Japanese will be available soon.

The software produces printed output in draft or high-quality print form. As a turnkey system configuration, the system can accept manually keyboarded text, computer input, or OCR input. Final, edited output can be printed, stored on disk or tape, or routed to other computer processing systems. Translation output has been tested at over five times the rate of manual methods. Software is also available unbundled.

Key features are dictionary maintenance capabilities, unattended translation process, batch processing, and multilingual word processing (used for final text editing). The software is especially valuable for translating technical documents, product manuals, publications, product user documentation, and so forth.

A version of this product is available for VAX computers.

Price: \$16,000 – \$150,000

Contact: Chris Ferro

(312) 564-8122

WEIDNER COMMUNICATIONS CORP.

500 Skokie Boulevard, Suite 270

Northbrook, IL 60062

Person System

PDP-11 Operating System: RT-11

Keywords: • Broadcasting • Data base management

Faced with the problem of keeping accurate records of the frequency of music-survey participation, RCS designed the Person System as an aid to the radio station department head responsible for ongoing music research. This survey-respondent data base management system sorts by name, address, zip code, and phone exchange and keeps accurate records of last and next contact. The system also prints mailing labels and reports. The system can be run with RCS's Sampler, the call-out survey analysis system.

Price: \$1000

Contact: Lee Facto
(914) 723-8567

RADIO COMPUTING SERVICES
2 Overhill Road, Suite 315
Scarsdale, NY 10583

Sampler

PDP-11 Operating System: RSX, RT-11

PRO Operating System: P/OS

Keywords: • Broadcasting • Statistics

The RCS Sampler call-out survey system provides a reliable way of tracking your audience's views, preferences, and tastes in artists, cuts, and types of music. Sampler, designed for radio stations, improves survey productivity by keeping accurate datable records, by watching sampling error, and by organizing the data-gathering and analyzing effort. Sampler generates random telephone numbers of legitimate form in a given area code and set of prefixes. Sampler keeps complete, tidy, timely records of your survey work and plans. Sampler can be run with the RCS Selector system.

Price: \$3000

Contact: Lee Facto
(914) 723-8567

RADIO COMPUTING SERVICES
2 Overhill Road, Suite 315
Scarsdale, NY 10583

Scribe Subscription and Merchandise Fulfillment System

PDP-11 Operating System: RSX

Keywords: • Data base management • Information management
• Inventory • Report writer

Scribe supplies software as part of a turnkey hardware/software package to perform in-house on-line subscription and merchandise fulfillment for periodical publishers. Scribe covers the entire spectrum of circulation management tasks: order entry, invoices and renewal notices, accounting and marketing analyses, ABC and BPA audit statements, label sorting and printing, customer correspondence, back issues and article reprints, second-class postal reports, and more.

The system has been in use since 1977 by publishers of magazines, journals, newsletters, reference series, and some newspapers. More than 30 publishers with more than 500 publications now use Scribe systems. File size typically ranges from 5000 to 750,000 in an unlimited number of titles. The system is comprehensive, well supported, proven in the field, and easy to use.

A version of this product is available for VAX computers.

Price: \$80,000 +

Contact: Thorn Mead
(617) 491-5553

SCRIBE DATA SYSTEMS (A FAXON CO.)

222 Third Street
Cambridge, MA 02142

Selector

PDP-11 Operating System: RSX, RT-11

PRO Operating System: P/OS

Keywords: • Broadcasting • Scheduling

Selector applies your radio station's music policy to provide controlled variety, balance, and consistency. This music-selection system offers double artist and title time protection, sound code time protection, and cart time protection. Scheduling is done by oldest last-play date within a category. Selector provides directories by artist, title, category, or cut/album in addition to cross-tabulations and histograms of artists, titles, and cuts. Music can be scheduled for two stations with different play lists and formats, using a single machine.

Price: \$7000

Contact: Lee Facto
(914) 723-8567

RADIO COMPUTING SERVICES

2 Overhill Road, Suite 315
Scarsdale, NY 10583

Storm Center

PDP-11 Operating System: RT-11

Keywords: • Broadcasting

The RCS Storm Center system organizes severe-weather announcements for school and business closings and can handle 4000 organizations. Storm Center prints reports by geographical area, opening time, and type of school or business. Storm Center remembers the "kill time" of each entry and ensures security by individual passwords. Storm Center prints mailing labels for use in contacting the businesses and schools in your area.

Whatever the cause — earthquake, flood, heatwave, or winter storm — Storm Center enables you to keep track of quick-breaking closing or late-opening announcements for schools, businesses, and public or private transportation services.

Price: \$2000

Contact: Lee Facto
(914) 723-8567

RADIO COMPUTING SERVICES

2 Overhill Road, Suite 315
Scarsdale, NY 10583

Television Operations Systems

PDP-11 Operating System: DSM (DSM-11)

Keywords: • Accounting • Broadcasting • Order processing
• Payroll

This system provides complete television business operations on one CPU and includes order entry and inventory control (such as sales, traffic, and copy/continuity), log production, billing, accounts receivable, and collection management. Accounts payable, general ledger, and payroll, all integrated and with EFT capability, are also offered. A separate module is included for connection to Western Union's EASYLINK system, which replaces a TWX machine. A tie-in to the Chryon VP-1 character generator, which creates broadcast-quality graphics and characters at one-quarter the cost of stand-alone systems, can be provided.

The system has on-site password and security control. All modules are independent, menu driven, and easy to learn.

Price: \$1000/mo - \$2000/mo

Contact: W. Lowell Putnam
(413) 786-7955

VIDEO COMMUNICATIONS, INC.

96 Industry Avenue
Springfield, MA 01104

TPINS (Times Publishing Interactive Newsprint Inventory System)

PDP-11 Operating System: RSTS

Keywords: • Accounting • Inventory • Printing
• Publishing

Memory required: 28K.

This complete DIBOL/DECFORM system for newsprint inventory accounting processes tasks ranging from freight car manifests to the month-end inventory report. The program was written for, but is not restricted to, a medium-size newspaper publishing company and is easily tailored. DECUS number 11-486.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Vista Publishing and Distribution System

PDP-11 Operating System: RSTS, RSX

Keywords: • Accounting • Distribution • Publishing
• Warehousing

This fully integrated distribution and financial system, developed by Vista Computer Systems, provides complete functionality to publishers. The system handles all facets of a publisher's operation, including order processing, electronic ordering, held-accounts quotation, and reserve, advance, review, and inspection copies; a promotion system;

marketing tape generation; back and standing orders; shipping confirmation, production costing, warehouse management, bulk store control, and inventory management; imported books, sales analysis, a mail order system, journal subscriptions, and installment sales; and general ledger, general ledger reporting, accounts payable, and accounts receivable, publicity mailing, royalties, author's ledger, an invoice archive system, and subsidiary rights; and consignment inventory.

A version of this product is available for VAX computers.

Price: \$40,000 – \$300,000

Contact: Stephen Wain
(201) 679-0460

WOODBURY COMPUTER ASSOCIATES
127 White Oak Lane, CN 1001
Old Bridge, NJ 08857

WCC CAT (Computer-Assisted Translation and Multilanguage WP System)

PDP-11 Operating System: RSX

Keywords: • Documentation tools • Foreign language translation
• Presentation aids • Word processing

This system is designed for the foreign language translation of documents. Software is available to translate English to Spanish, German, French, Portuguese, and Arabic. Software is also obtainable in the following language directions: Spanish to English, German to English, and French to English. Available soon will be software accommodating both directions of Japanese, English, and Italian. Printed output is in draft or high-quality print form. The system can accept manually keyboarded text, computer input, or OCR input. Final, edited output may be printed, stored on disk or tape, or routed to other computer processing systems. Translation output has been tested at more than five times the rate of manual methods.

A version of this product is available for VAX computers.

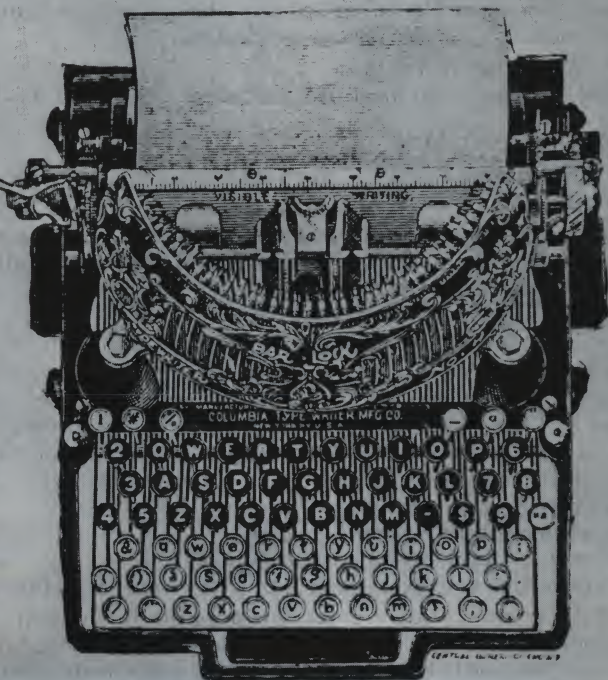
Price: Available upon request

Contact: Robert Adams
(312) 564-8122

WEIDNER COMMUNICATIONS CORP.
500 Skokie Boulevard, Suite 270
Northbrook, IL 60062

Office Systems

Awarded the only Gold Medal,
Mechanics' Fair, Boston, 1892.



A-to-Z

PDP-11 Operating System: Micro/RSX

Keywords: • A-to-Z

Memory required: 512K bytes.

This integrated, expandable, multiuser system for the small-business computer market provides word processing, electronic mail, graphics, spreadsheets, data management, and query and report-writing abilities. A-to-Z also integrates with other DIGITAL software, thus allowing the system to grow with small businesses.

A-to-Z is a single-source system, which means that applications can be easily integrated, data can be shared across applications, and keyboard conventions and facilities are the same in each application. Those features speed learning and use. The system also features clear menus and help facilities for the inexperienced user.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

A-to-Z Electronic Mail

PDP-11 Operating System: Micro/RSX

Keywords: • A-to-Z • Electronic mail

This menu-driven electronic mail system runs as an optional component of the A-to-Z Integrated System. A-to-Z Electronic Mail uses the same installation process as the other A-to-Z Integrated System components and allows the user to:

- Send, answer, forward, and delete messages
- Use electronic mail from A-to-Z menus
- Create and edit messages using A-to-Z Word Processing
- Store and list messages in folders, retrieve messages from folders, collect messages from folders by subject, and move messages from one folder to another
- Print messages on a hard-copy printer
- Convert a message into an A-to-Z report
- Define, use, and change distribution lists
- Obtain on-line help explaining A-to-Z Electronic Mail functions

A-to-Z Electronic Mail menus and prompts have been carefully designed to help the beginning user easily select desired functions. Additional on-line help is available. The user documentation provides further information in tutorial format.

A-to-Z Integrated System and A-to-Z Word Processing are prerequisite.

Refer to SPD #18.26.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$400

Contact: Contact your local DIGITAL sales office (see Introduction).

A-to-Z Integrated System

PDP-11 Operating System: Micro/RSX

Keywords: • A-to-Z • Information management • Management
• Menu handlers

The A-to-Z Integrated System, required for A-to-Z layered applications, is a user-installable multiuser base system that supports up to four MicroPDP-11/23 users and eight MicroPDP-11/73 users. A-to-Z Integrated System includes menu-driven system management functions, as well as the ability to install and remove Micro/RSX applications. Inherent in the system are the menu manager and flow-control processor, which insulate the end user from the system-level interface without isolating the developer or system manager from the functions available at the Micro/RSX command level. The A-to-Z Integrated System includes the Micro/RSX operating system software and the right to use Micro/RSX DIBOL on the system.

The A-to-Z applications are A-to-Z Business Graphics, A-to-Z Data Inquiry, A-to-Z Document Transfer, A-to-Z Electronic Mail, A-to-Z Integration Kit, A-to-Z Supercomp-Twenty,[®] and A-to-Z Word Processing.

Supercomp-Twenty[®] is a registered trademark of Access Technology.

Refer to SPD #18.16.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1000

Contact: Consult your local DIGITAL sales office (see Introduction).

Abax Mailing Label System

PDP-11 Operating System: CTS-300, RSTS, RT-11, TSX-PLUS[™]

Keywords: • Information management • List processing
• Printing

This system prints pressure-sensitive labels for mass mailing and internal controls and supports an unlimited number of lists. The labels are printed in accordance with postal standards and are presorted for the best postal rates. The printed labels can be selected by number, name, street name, zip code, or precinct number by a user-defined code.

TSX-PLUS[™] is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$400 - \$600

Contact: Charles R. McKown, President
(316) 792-7318 or (800) 221-1265

ABAX COMPUTER SYSTEMS

625 Washington Street, P.O. Box 1349
Great Bend, KS 67530

ALP (Address List Processor)

PDP-11 Operating System: RSTS

Keywords: • List processing

This processor performs on-line screen entry list maintenance and label/envelope/correspondence production and features list creation, address entry, duplicate-entry detection, and list extraction. Each list is created with an identifier and 12 data fields. The user can define additional data fields and their edit characteristics. ALP's benefits include easy maintenance of large mailing lists, automatic elimination of duplicates on command, and choice of subsets of list based on user-selected data fields.

Address records can be entered by keyboard to a formatted screen or from lists supplied on tape. Individual field editing is performed, including state abbreviation and ZIP code validation checking. Canadian and foreign addresses are accepted.

Lists can be removed to tape or separate files for backup. Address records can be individually updated, deleted, or displayed.

Labels can be printed 1-up, 2-up, 3-up, or 4-up. Labels can vary in size from plain white 7/16" × 3" to shipping labels as large as 5" high. Continuous-form envelopes can also be printed.

ALP creates a word processing list file for production of personalized correspondence and can merge this list with a form document to create the personalized output. ALP can also print calling cards, index cards, postcards, and much more. A user installation/instruction guide is included.

A version of this product is available for VAX computers.

Price: \$3000

Contact: Neal J. Anderson, Senior Product Specialist
(414) 784-8250

MCHUGH, FREEMAN AND ASSOCIATES, INC.
1135 Legion Drive, P.O. Box 454
Elm Grove, WI 53122

BIGCAL: A Calendar Scheduling Program

PDP-11 Operating System: RSX, RT-11

Keywords: • Presentation aids • Scheduling

Memory required: 17KW.

This FORTRAN IV program can be compiled under either RT-11 or RSX-11M. After prompting the user, BIGCAL generates a calendar for the months or year specified. The calendar has boxes around each day, making it easy to jot down notes and appointments. BIGCAL includes a day-of-week algorithm, used to determine the day of week based on month, day, and year between 1752 and 2099. The size of the calendar is variable from 40 to 132 columns as well as 40 to 132 rows for each output page. Output from BIGCAL is sent to the file BIGCAL.OUT on the user's device. DECUS number 11-623.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

BOS/AutoIndex

PDP-11 Operating System: BOS/5, MBOS/5

Keywords: • Data base management • Query facilities

BOS/AutoIndex, a data storage and retrieval system, uses data base techniques to automate the functions performed manually — searching through a card index or a file cabinet. BOS/AutoIndex runs under the single-user BOS/5 and multiuser MBOS/5 operating systems. Under MBOS/5, BOS/AutoIndex allows more than one user to access and update the data base concurrently without loss of data integrity.

Price: \$550 - \$900

Contact: Ron Moore

(214) 484-2717

BOS NATIONAL, INC.

2560 Royal Lane #228

Dallas, TX 75229

BOS/Planner

PDP-11 Operating System: BOS/5, MBOS/5

Keywords: • Financial analysis • Financial planning
• General ledger • Spreadsheets

BOS/Planner, a spreadsheet program aimed at financial planning and modeling, runs under the single-user BOS/5 and multiuser MBOS/5 operating systems. BOS/Planner provides facilities for budgeting, cash-flow forecasting, depreciation calculations, net present value, internal rate of return, and combining and consolidating plans.

Price: \$550 - \$900

Contact: Ron Moore

(214) 484-2717

BOS NATIONAL, INC.

2560 Royal Lane #228

Dallas, TX 75229

BOS/Writer

PDP-11 Operating System: BOS/5, MBOS/5

Keywords: • Word processing

BOS/Writer is a powerful, menu-driven word processor that runs under the single-user BOS/5 and multiuser MBOS/5 operating systems. BOS/Writer provides all the facilities necessary for processing office paperwork, including document creation, updating, printing, archiving, and merging. BOS/Writer can merge data from a business application to a document, thus integrating data processing with word processing.

Price: \$550 – \$900

Contact: Ron Moore

(214) 484-2717

BOS NATIONAL, INC.

2560 Royal Lane #228

Dallas, TX 75229

Bridge/86

PDP-11 Operating System: RSTS, RSX, ULTRIX-11

Keywords: • File management • Personal computing
• Printing • Systems communications

The Bridge/86 system is used primarily in office automation projects and for software development. Virtual microcomputing is available at every terminal attached to the mini. Thus, users can move to a CP/M® or PC-DOS environment that is tightly linked to other users. File storage, printing backup, and so forth are done at the host machine, yet the user sees a normal microcomputer environment. Thus, the system manager can provide personal computing as an option to system users, without purchasing separate units.

CP/M® is a registered trademark of Digital Research, Inc.

A version of this product is available for VAX computers.

Price: \$2450 – \$7500

Contact: Deryk Van Brundt

(415) 841-9594

VIRTUAL MICROSYSTEMS

2150 Shattuck Avenue #300

Berkeley, CA 94704

CALC (Accounting Calculator), Version II

PDP-11 Operating System: RSTS

Keywords: • Accounting • Calculation aids

This multifunctioned accounting calculator is designed to operate on the VT1xx- and VT2xx-series terminals. CALC, featuring on-line help, provides the basic functions of a desk-top calculator, using the keyboard's auxiliary keypad and a screen display that simulates a strip of paper. Additional features include hard-copy printout, constants, and accessible memory registers. The system has additional functions allowing the CRT to operate as if it were four calculators (strips). Those strips can be compared for validation of long sequences of entries.

Demonstration tapes and user manuals can be purchased to preview the functioning of the product. A user installation/instruction guide is included.

A version of this product is available for VAX computers.

Price: \$250

Contact: Neal J. Anderson, Senior Product Specialist

(414) 784-8250

MCHUGH, FREEMAN AND ASSOCIATES, INC.
1135 Legion Drive, P.O. Box 454
Elm Grove, WI 53122

CFMS (Computerized Forms Management System)

PDP-11 Operating System: ULTRIX-11

Keywords: • Forms management • Inventory • Printing
• Purchasing

The five CFMS system modules cover specific forms management areas. Although the modules are independent, they are also compatible. Some users group individual modules into larger systems to maximize the potential operating efficiencies and associated dollar savings. The modules share advanced forms management concepts and software technology.

- **Forms Management** collects data on company forms, documents, and supplies and makes otherwise inaccessible data immediately available. This module also provides a standardized data base to identify duplication and promote consolidation, prevent miscommunication, promote cost reductions through ordering efficiencies, track and monitor forms activity, and help users understand total form requirements.
- **Forms Control** maintains inventory records for forms and supplies, accurately enforces proper form inventory levels, prevents out-of-stock situations, and limits premature ordering, excess storage costs, and so on. The module also identifies obsolete or superfluous forms, provides true current inventory values, and puts "teeth" into inventory management for forms.
- **Forms Buying** allows the user to standardize decision-making data and collect vendor information. This module also generates requests for quotations, purchase requisitions, and purchase orders.
- **In Plant Printshop** controls and monitors in-house print shops on a cost basis equivalent to that of outside suppliers.
- **Records Management** provides a systematic approach to establishing and controlling the available storage space, retention schedules, and record-access management for forms once they are used and thus become records.

All modules include a flexible and sophisticated Report Generator (REPORTGEN), which presents accurate, clearly formatted information to management, based on data maintained by the system.

A version of this product is available for VAX computers.

Price: \$9800 - \$30,000

Contact: Gar Ragland
(312) 530-1023

COMPUTERIZED FORMS MANAGEMENT, INC.
880 North York Road, Suite 201
Elmhurst, IL 60126

Cortex Desk Set™

PRO Operating System: P/OS

Keywords: • Calculation aids • Disk utilities • Scheduling

This business application patterns the working environment of the individual. Each of the 10 modules replicates a particular working tool in the office: appointment calendar, telephone address directory, expense report, calculator, time and charge keeper, memo tracker, telephone record book, phone message pad, to-do list, and commitment tracker.

The calculator module makes the personal computer appear to the user to be a familiar calculator. The other nine modules have data management capabilities that permit records to be added, browsed through selectively (that is, retrieved by different keys), changed, deleted, summarized, and printed. Files are RMS-compatible, and entries into the to-do list and into the commitment tracker can automatically be placed on the appointment calendar.

P/OS hard disk operating system is prerequisite.

Refer to SPD #A2.29.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$195

Contact: Consult your local DIGITAL sales office (see Introduction).

CPS Word Processing System

PDP-11 Operating System: RSTS

Keywords: • Text management • Word processing

This system consists of two stand-alone packages: a text editor (REVISE) and a text formatter.

Written in BASIC-PLUS, REVISE runs on 10KW of memory and is line oriented for better system response time. Also, swapping is reduced because of the system's small size, 10KW. REVISE is thoroughly debugged and is easy to use. A user needs less than an hour to learn and remember fewer than 10 simple commands. REVISE is documented and includes a tutorial session. REVISE features unlimited secondary input and output files, easy commands for duplicating and moving, the ability to make global changes within the buffer area, and the ability both to define a shift character so that upper-/lowercase can be input from an uppercase-only terminal and to insert or change non-printing characters. In addition, a backup file is always created in case the program should end abnormally. CTRL/C is disabled for total protection.

The text-formatting programs permit text to be entered and edited in an easy, unformatted way and then to be cleaned up. Little attention need be given to where the right margin is. Even if a line contains only one word, the program will reformat the line. Many formatting and special options are available — automatic centering, underlining, page numbering, line spacing, super- and subscripting, right justification,

and so forth. (However, not all features may be available for all printers.)

The system supports normal, non-letter-quality printers (such as the LA180 and LA120), the AJ832 letter-quality printer, and the DIABLO 630 letter-quality printer with word processing option. The programs can be modified for other printers.

Price: \$500 – \$850

Contact: Robert Sendek, Computer Specialist
(212) 644-1749

POPULATION COUNCIL

One Dag Hammarskjold Plaza
New York, NY 10017

CT*OS/IT*OS Word Processing

PDP-11 Operating System: Micro/RSTS, Micro/RXS, RSTS, RSX,
RT-11, TSX-PLUS™

PRO Operating System: P/OS

Keywords: • Documentation tools • Menu handlers
• Text management • Word processing

This full-featured word processing software package is a menu-driven office-quality system that includes an 87,000-word spelling corrector, list processing, user-defined keys, ASCII file transfer, scientific characters, math capabilities, and files that can be moved without a conversion program. Those features are supplemented with such standard word processing functions as cut and paste, search and replace, multicolumning, autocentering, copy document, automatic paragraph numbering, table of contents, and so on. The program is written in assembly and C languages. Features vary according to operating system.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$950 – \$7000

Contact: Robin Maxell
(818) 796-9374

INTERMATION CORP.
234 East Colorado Boulevard
Pasadena, CA 91101

Date*Book

PDP-11 Operating System: RSTS, RSX

Keywords: • Information management • Project management
• Scheduling

This calendar management system organizes and schedules time. Date*Book maintains an appointment calendar for each user and provides reminders of upcoming events by means of a tickler file. Date*Book is interactive, works on any terminal, and is user friendly but provides shortcuts for advanced users. Designed for the medical

practice or business office, Date*Book can also be used to manage resources, such as conference rooms, computers, or other facilities and equipment.

Date*Book enables users to schedule new events or cancel or reschedule existing ones, automatically schedule a group meeting by finding a mutually available time slot for each person, and notify each member when a meeting is canceled or rescheduled. Each user's schedule is private. Users can request a listing of events for a given day, week, or month.

Date*Book uses simple commands, prompts the user for the next command, detects user errors, and provides understandable error messages and a help facility.

A version of this product is available for VAX computers.

Price: \$1000 - \$5000

Contact: Donald Rubin, President
(301) 982-1818

SYSTEMS ENGINEERING TECHNOLOGY INC.
10676 High Beam Court
Columbia, MD 21044

DECmail-11

PDP-11 Operating System: Micro/RSTS, Micro/RXS, RSTS, RSX

Keywords: • Electronic mail • Networking

This electronic message system runs on the RSTS/E, Micro/RSTS, RSX-11M-PLUS, and Micro/RXS operating systems. On a single-node system, DECmail-11 can create, edit, send, and process messages and store, search for, and retrieve messages held in user folders.

DECmail-11 can operate in a network environment by using DECnet/E for RSTS and DECnet-11M-PLUS for RSX. The Message Router, an optional product for the network environment, provides a store-and-forward transport mechanism among RSTS/E, RSX-11M-PLUS, and VAX/VMS nodes. DECmail-11 acts as a user-agent to the Message Router.

DECmail-11 users can use the EDT text editor for preparing text messages. The EDT option provides the power of the standard editor without the need to learn a new set of editing commands.

DECmail features include on-line help; message creation, answering, and forwarding, with or without editing; message filing into folders; selective display of message listings by author or subject; distribution lists; message printing and deleting; the ability to send, as a message, an ASCII text file (stream, variable, fixed, or sequential) created outside the DECmail-11 environment; and the ability to export message text into RSTS/E, Micro/RSTS, RSX-11M-PLUS, or Micro/RXS files.

Refer to SPD #13.19.xx (RSTS) or SPD #13.27.xx (RSX) when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the VAX computer.

Price: \$80 – \$1060

Contact: Consult your local DIGITAL sales office (see Introduction).

DECmail™-PLUS

PDP-11 Operating System: RSTS

Keywords: • Electronic mail

DECmail-PLUS is a way to integrate DIGITAL's DECmail with WORD-11 on your RSTS/E system. The package includes:

- A WORD-11-like editor so that mail users will see the same keyboard interface for message editing that they use for WORD-11.
- Distribution to individuals or lists. Messages can be stored and sent later.
- A system management program.
- The capability to transmit WORD-11 documents through DECmail-PLUS from the WORD-11 main menu.

Price: \$2500

Contact: Karen Ackland, Marketing Manager

(714) 970-1515

DATA PROCESSING DESIGN, INC.

1400 North Brasher Street

Anaheim, CA 92807

DECWORD/DP and DECWORD for Micro/RSTS

PDP-11 Operating System: Micro/RSTS, RSTS

Keywords: • Computer-aided instruction • Text management
• Word processing

This word processing package features menu-driven document processing, including word and list processing, communications, and computer-based user instruction (CBI). The editing capabilities permit the user to input and correct text without retyping. List processing allows production of many identical or similar documents, including reports, customized letters, and mailing lists. Math and sort utilities permit the user to manipulate data within the list processing documents.

CBI provides on-line, self-paced instructions to teach basic word processing skills. The course is comprised of 11 basic word processing lessons. CBI is task oriented rather than feature oriented. By following simple commands at the terminal, trainees can learn to perform straightforward tasks, such as writing and printing a letter.

The package should be managed and supported by RSTS/E data processing staff, who can manage system resources and ensure that users are adequately trained. System management is provided by a combination of RSTS/E utilities and DECWORD utilities. Installation,

user management, and document management are clearly described in the DECWORD manager's manual set.

Refer to SPD #13.14.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$3500 - \$4500

Contact: Consult your local DIGITAL sales office (see Introduction).

Dreams

PDP-11 Operating System: RSTS

Keywords: • Documentation tools • Electronic mail
• Networking • Text management

This electronic mail system has been installed in a wide range of business and academic environments. Development of new capabilities is a continuing process, with support and updates for Dreams users. Dreams has been one of the pilot project mail systems in the developing EDUCOM-sponsored Mailnet network linking college electronic mail systems. Thus, easy accessibility to the network is ensured with Dreams.

The current version of Dreams is compatible with DECnet for message transmission to distant nodes and with MAILNET. EDT, DECword, WORD-11, TECO, or other editors can be invoked, with a smooth transition to and from the editor. A flexible method for accessing and maintaining multiple mail files is provided. Subjects for mail files and individual messages are available. Unread messages can be retracted and recovery made of the last deleted message. Dreams can specify times and dates in relative or absolute form to control message appearance or expiration or to narrow selection criteria. Dreams is fully compatible with Batch, for keeping abreast of unattended operations and for implementing a repetitive reminder system based on day of the week or other, longer intervals. Dreams provides message acknowledgment of receipt or expiration of messages.

In addition, the system manager can assign defaults for accounts, projects, and the entire system, including the assignment of certain privileges. Messages can be sent to names, nicknames, or groups and can be scanned, replied to, forwarded, or stored for later appearance. New, old, priority, or suppressed messages are available for each mail file. Messages are automatically routed.

A version of this product is available for VAX computers.

Price: \$1500 - \$5000

Contact: Thomas W. Burtnett, Director
(717) 245-1256

DCXX SOFTWARE SERVICES

Dickinson College Computer Center

Carlisle, PA 17013

DTC (Desk Top Calendar)**PDP-11 Operating System:** IAS, RSX**Keywords:** • Presentation aids • Printing • Scheduling

The program allows day-, week-, or month-at-a-glance displays; private and public calendar appointment files; meeting scheduling; multiple-appointment setup; evening appointments; and other functions. DTC runs on a VT100 but can be modified for other terminals. Build files are supplied for PDP-11 (RSX) and VAX. DTC can run under RT-11 if F77-type constructs are changed to FORTRAN IV. An RSX task image, not requiring a floating point, is supplied for users who lack the F77 compiler. VAX users are assumed to have access to native-mode FORTRAN; on VAX, DTC runs in native mode. DECUS number 11-597.

Note: Added multifile ability and purging of old appointments, meeting scheduling, a bug fixer, free-time searching, and simpler appointment entry are provided.

A version of this product is available for VAX computers.

Price: \$5 - \$225**Contact:** DECUS (see Introduction)**EXECmail****PDP-11 Operating System:** RSTS**Keywords:** • Electronic mail

This high-performance electronic mail package encourages correct communication skills and helps the user complete communication cycles. Communications in a series are linked, and earlier messages can be reviewed with a few simple keystrokes.

The easy-to-use menu-driven EXECmail system has single-key commands and offers detailed help prompting. Written in native MACRO assembly language, using systems programming techniques, EXECmail is fast and efficient; only one disk block for each message is required.

Messages of any length, documents, and files are transferred at electronic speed. EXECmail can be used to relay text, graphics, binary programs, documents, and computer files.

Features include use of an in-basket, pending-basket, out-basket, and wastebasket. An alert of new mail is received when the user logs on to the system. Message status can be seen at a glance. Messages can be sent to individuals or groups.

DECnet-compatible EXECmail is available with the full-featured, sophisticated CT*OS Word Processor built in for creating and reading documents.

A version of this product is available for VAX computers.

Price: \$2690 – \$16,000

Contact: Sally Jensen, Marketing Director
(213) 461-6688

EXECUTIVE SOFTWARE, INC.

5537 Tuxedo Terrace

Los Angeles, CA 90068

FACS (Flexible Automated Collection System)

PDP-11 Operating System: Independent

PRO Operating System: Independent

Keywords: • Accounts receivable • Credit

• Financial management • Telecommunications

This paperless system streamlines and prioritizes the debt collection process. FACS allows the collection organizations to balance individual collector workloads, link multiple accounts for each debtor, and dial the telephone. The system also provides a flexible letter series (starting with precollect letters, collector-requested letters, and customized letters) and management reports on demand (collector, unit, and agency statistics reports on daily, month-to-date, year-to-date, and to-date) basis.

The software, written in the ANSI standard data base, MUMPS, can easily be transported across the entire line of DIGITAL's computers.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: J. Douglas Gregg
(317) 284-7131

ONTARIO SYSTEMS CORP.

300 West Airpark Drive

Muncie, IN 47303

Graphix-11™

PDP-11 Operating System: RSTS, RSX, RT-11, TSX-PLUS™

Keywords: • Graphics

Graphix-11 is a business graphics chart generator that produces quality color and black-and-white bar charts, line graphs, pie charts, and scattergrams, using the graphics features of most DIGITAL printing terminals and graphics CRTs. Graphix-11 uses a question-and-answer format to determine the attributes of charts to be produced. Users need no specific programming skills, and many of the optional features default intelligently to produce well-structured output the first time. The package can also recall parameters from a previous chart or can be driven by simple free-form parameters written by another applications program.

Graphix-11 charts feature scaling of axes, allowing the package to quickly summarize large data files into useful form. Scales can also be easily specified.

This unique package uses the graphics capabilities of matrix printers, both in black and white and in color. Shaded areas on charts are created by using sophisticated pattern-fill techniques, giving the user up to 25 patterns from which to select, as well as 14 colors on color devices. The result is a quality chart with a half-tone appearance that photocopies well. Devices supported include LA34, LA50, and LA100 terminals, as well as LA120s with Texprint's add-in DECPLLOT and DECOLOR hardware. VT125s, VT240s, VT241s, and any other ReGIS devices are also supported, as well as the LVP16 6-pen plotter and printers by Trilog, Printronix, Anadex, and DataSouth.

A complete user manual is supplied and is also available separately. A product lifetime warranty is standard, as is telephone support. Software updates are available at a reasonable charge.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$1095 - \$2995

Contact: Roger T. Prichard
(215) 925-6690

GEOGRAPHIX, INC.
156 North Third Street
Philadelphia, PA 19106

IB Graph

PDP-11 Operating System: RSTS

Keywords: • Graphics • Presentation aids

This menu-driven system allows users to produce various types of business graphics. For example, IB Graph can produce horizontal and vertical bar graphs, floating bars, and bars with depth. Users may explode any number of segments of a pie. Shaded line graphs are possible.

Data may be either entered by the operator or captured from existing data bases through the menu-based system. Thus, no new code needs to be written to convert data for plotting.

IB Graph supports a wide range of plotting devices: VT125s, VT240, VT241, TEK4105s, LA34s, LA100s, Printronix Line Printers (LXY/11 and LXY/21), and Hewlett-Packard Plotters with an HPGL or HPIB interface.

A version of this product is available for VAX computers.

Price: \$2000 - \$3500

Contact: Karen Ackland, Marketing Manager
(714) 970-1515

DATA PROCESSING DESIGN, INC.
1400 North Brasher Street
Anaheim, CA 92807

IND/DEV-11 (Industrial Development Management System)

PDP-11 Operating System: CTS-300, RT-11

Keywords: • Financial analysis • List processing
• Property management • Word processing

This comprehensive interactive system for managing an industrial development organization is written in DIBOL and consists of seven standard modules and three optional modules. The standard modules are Target Mailing, Prospect Tracking, Site and Building Management, Contributors/Membership, Prospect Financial Analysis, Loan/Payback Analysis, and Word Processing. The optional modules are General Ledger, Payroll, and Accounts Payable.

The standard modules include the means to implement a personalized mailing campaign to both target and prospect companies, the ability to maintain close contact with them, maintenance of member/contributor records and the solicitation of potential members and contributors, maintenance of a comprehensive listing of sites and buildings available to prospective companies, the preparation of a financial analysis report on a prospect to evaluate the financial strengths of the prospect company, the preparation of a loan/payback analysis report showing the principal and interest to be paid over the life of the loan, and more. The optional modules include the basic elements to handle and record payroll and expenditures and to keep track of the financial status of the developer's organization.

Each turnkey system includes user-friendly procedures, on-site training, and continuous support. Program modification and customization are available. A sample packet containing reports, forms, and screen layouts is available. Dealer inquiries are encouraged.

Price: \$5000 - \$8000

Contact: Robert L. Metzger
(504) 542-1479

DIGITAL COMPUTER SYSTEMS, INC.
31 Darrell Drive
Hammond, LA 70401

InterText™

PDP-11 Operating System: DSM (DSM-11)

PRO Operating System: MUMPS®

Keywords: • Data entry • Pre- and postprocessors
• Text management • Word processing

This complete word and text processing system can be used on either standard CRT terminals or terminals with advanced video options. InterText has been designed so that variable names can be embedded in the texts. The user can fill in those variables when the texts are printed. Special preprocessors and scans can be defined that will derive the values to be printed from any data base that coexists on the same disks with InterText.

Like any other word processing system, InterText can be considered a smart typewriter for writing, editing, and printing text. After being created and edited, a text file can be printed in a formatted version, which InterText accomplishes by interpreting formatting controls in the text and those that are defined by the user at the time of printing.

The user can print text by itself, in a stream with other text files, or by using InterText's special processor option. At each printing, the user is requested to indicate the text file(s) to be printed, what spacing (between lines) is required, the number of copies to be printed, and the margins to be used. If the special processor option is used, the user also specifies which processor is to be used, and the system selects the output on the basis of that processor, filling in variable data as it proceeds.

MUMPS® is a registered trademark of Massachusetts General Hospital.

A version of this product is available for VAX computers.

Price: \$2500

Contact: Alexander J. Phillips, President
(201) 256-7633

INTERACTIVE SYSTEMS AND MANAGEMENT CORP.
1500 Cardinal Drive
Little Falls, NJ 07424

LABELS: The Mailing List System

PDP-11 Operating System: RSTS

Keywords: • Forms management • List processing
• Text management • Word processing

LABELS is an interactive system for developing, maintaining, and printing a mailing list or mailing labels. A master file record contains fields for company name, personal names, address lines, a 5- or 9-digit ZIP code, and phone number. A 2-character field for a geographic region code, five 2-character fields for category codes, and five 2-character fields for specialty codes are optional.

In creating a mailing list, the user can choose up to nine categories and up to nine specialty codes, as well as a specific geographic region or all regions. The system then gives a record count listed by the first three digits of the ZIP code and allows the user to delete certain ZIP codes from the listing. The system allows the user to create multiple listings for each addressee and produces a user-named output file. The system also contains a menu option for determining the record count for each ZIP code of the master file.

The system supports check-digit numbering systems.

A version of this product is available for VAX computers.

Price: \$1500 - \$2250

Contact: Nathan I. Lieberman
(812) 479-6951

EVANSVILLE DATA PROCESSING CORP.

1010 S. Weinbach Avenue
Evansville, IN 47714-2994

LEX-11

PDP-11 Operating System: CTS-300, IAS, Micro/RSTS, Micro/RXS, RSTS, RSX, RT-11, ULTRIX-11

PRO Operating System: CTS-300, Idris™, P/OS, PRO/VENIX™, RT-11, TSX-11, XENIX™

Keywords: • Data base management • Spreadsheets
• Word processing

Memory required: 32KW.

LEX is an integrated word processing, data base, and calculator system. The word processing element supports all the standard features, as well as forward and backward search, standard paragraphs, automatic spell checking, mathematical character sets, mail shot, and list processing. The multiuser data base supports up to 100,000 indexed variable-length records and includes a sort and a powerful select facility to help in the production of reports.

All menus, forms, report layouts, and record formats can easily be changed by the user. This flexibility, coupled with LEX's integral programming language, allows the system to be tailored for applications. LEX is used in conveyancing, personnel systems, vehicle fleet management, and so on.

LEX has been translated into many foreign languages, including German, French, Italian, and Arabic. LEX is written in Ace's portable decision table language, FILETAB-D.

Idris™ is a trademark of Whitesmiths, Ltd. VENIX™ is a trademark of VenturCom, Inc. XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: £500 - £3200

Contact: J. E. Irwin
01-847-4673

ACE MICROSYSTEMS LTD.

Kew Bridge House, Kew Bridge

Brentford, Middlesex TW8 0EJ United Kingdom

LEXET

PDP-11 Operating System: CTS-300, IAS, Micro/RSTS, Micro/RXS, RSTS, RSX, RT-11, ULTRIX-11

PRO Operating System: CTS-300, Idris™, P/OS, PRO/VENIX™, RT-11, TSX-11, XENIX™

Keywords: • Documentation tools • Printing
• Text management

LEXET allows typeset-quality output to be produced on laser printers from documents created with a word processor, such as LEX. LEXET

takes advantage of built-in, down-loaded, and graphics-generated fonts and supports proportional spacing.

In the United States, contact Eric Dickman, EEC Systems Inc., 327/E Boston Post Road, Sudbury, MA 01776.

Idris™ is a trademark of Whitesmiths, Ltd. VENIX™ is a trademark of VenturCom, Inc. XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: £250 – £1600

Contact: J. E. Irwin
01-847-4673

ACE MICROSYSTEMS LTD.
Kew Bridge House, Kew Bridge
Brentford, Middlesex TW8 0E United Kingdom

Lyrix™ Word Processing System

PDP-11 Operating System: ULTRIX-11, XENIX™

PRO Operating System: XENIX™

Keywords: • Forms management • Printing
• Text management • Word processing

This word processing system is designed specifically for use under XENIX or UNIX* operating systems. Lyrix has a fully user-configurable interface; commands, menus, and messages are easily adapted to individual users and can be translated into foreign languages, including special characters and accents. Lyrix combines text editing, formatting capabilities, and print-time commands into a single environment. The Lyrix menu provides access to integral UNIX*/XENIX functions, such as mail or file-management utilities, without the need for added software packages. With Lyrix, the terminal screen acts as "electronic paper," displaying what will be printed. Visible rulers control margins, tabs, and line justification.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$750 – \$3995

Contact: Telemarketing Department
(408) 425-7222

THE SANTA CRUZ OPERATION, INC.
500 Chestnut Street, P.O. Box 1900
Santa Cruz, CA 95061

MAIL: Electronic Mail Package for RSTS/E

PDP-11 Operating System: RSTS

Keywords: • Electronic mail • Networking

Memory required: 12KW.

This electronic mailing program for the PDP-11 running the RSTS/E operating system allows any user to send mail to another user by

account. MAIL will protect from users sending mail if the receiver does not wish to receive. MAIL uses a 12KW job and was developed on an educational system for students. DECUS number 11-673.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Mail List/RXS

PDP-11 Operating System: RSX

Keywords: • List processing

Mail List/RXS, running under the RSX-11M or RSX-11M-PLUS operating system, is a comprehensive, automated, multiuser, menu-driven system for maintaining mailing list records and printing mailing labels. Mail List/RXS offers maximum efficiency and ease of use. Multiple users can simultaneously access the mailing list data to add, delete, inquire, or change names.

Mail List/RXS can also flag local companies for special mailings or include competitors on the list without printing mailing labels for them. Users can be trained to use Mail List/RXS very quickly, avoiding costly training programs.

Mail List/RXS includes a license and documentation.

Price: \$495

Contact: Sandra K. Graham, Operations Manager
(617) 894-3278

ADVANCED COMPUTER SYSTEMS, INC.
250 Prospect Street
Waltham, MA 02154

Mail Package

PDP-11 Operating System: RSTS

Keywords: • Electronic mail • Networking

Memory required: 16K.

The four Mail Package programs provide all the facilities necessary to create and maintain a sophisticated "postal" system for RSTS/E users. To use the system, a user must first register by entering his or her name into a Mail user data file ledger. That is done only once. From then on, the user's name is associated with his or her account number, and the user is allowed to send and receive mail. Mail bearing the sender's identification is sent directly into the recipient's account. DECUS number 11-326.

Note: Certain features necessary for proper operation of the programs are not implemented in previous versions of RSTS. The programs' data files require a minimum of 250 blocks; that figure could expand to 400 blocks if all possible system accounts are occupied by only one individual.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

MAILER: Mailing List System**PDP-11 Operating System:** Micro/RSTS, RSTS, RT-11**Keywords:** • List processing

These nine programs for maintaining and using mailing lists allow you to assign a group code name or number, an identification key name or number, and comments to each address. The address number and entry date are automatically entered by the computer.

Addresses can be sorted and printed by a person's last name, company name, or ZIP code. You can select only certain group codes, identification keys, address numbers, or dates to be printed. The programs print both address labels and address listings for your records. The ZIP code sort is useful for bulk mailings.

Additional options enable you to look up an address when only some information is known. For example, you can look up all persons named Sam in Maryland or all persons living on Evergreen Street. (Program options are accessed from the master program, MAIL.)

You can print a category report that lists all the group codes and identification keys used and the number of addresses in each code or key. One program compares addresses and prints out possible duplicates.

These mailing list programs are written in BASIC. A well-written, easy-to-use user's manual is included.

Price: \$450**Contact:** Raymond H. Green

(813) 360-1967

RAY GREEN AND ASSOCIATES

603 55th Avenue

St. Petersburg Beach, FL 33706

Mail/Message System**PDP-11 Operating System:** RSTS**Keywords:** • Electronic mail • Networking

Memory required: 11K words.

The Mail System allows mail/messages to be sent to system users, whether or not they are using the system. Mail can be read, sent, deleted, and moved to or sent from existing files. Each member of the system has a "mail-box" file on his or her account. An append file for the LOGIN program is provided, as are utility programs for creating and initializing "mail-box" files and adding new users to the valid mail system users' list. A user's guide and technical specifications document are provided. DECUS number 11-287.

Restrictions: Current implementation is for a 24-hour, not A.M./P.M., clock.

Price: \$5 - \$225**Contact:** DECUS (see Introduction)

Memo

PDP-11 Operating System: RSTS

Keywords: • Data collection • Data entry

Memory required: 9KW.

Memo acts as a computerized note box, giving users a quick, convenient way of storing notes about good ideas and/or things to do. Features include listing memos by subject material, appending to previously entered memos, and output to a file. DECUS number 11-607.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Minimail

PDP-11 Operating System: RSTS, RSX

Keywords: • Electronic mail

This low-cost, menu-driven, internal electronic mail system is designed to run with data processing and word processing applications. Minimail contains its own document-creation facilities and can accept documents created by other systems, such as word processing packages, editors, communicating word processors and personal computers, telex, and other external electronic mail services. Documents can be mailed to any number of users, with only one copy being held on disk. Receipt and acknowledgment can be monitored by the sender's Out Tray. Messages are received and summarized on the recipient's In Trays, with facilities to display, acknowledge, annotate and remail, and print and file the incoming mail.

In the United States, contact Lantor Inc., 8055 Massachusetts Avenue, Playa Del Ray, CA 90291.

A version of this product is available for VAX computers.

Price: £750 - £3000

Contact: P. J. Kemple
0242 584301

CORPORATE BUSINESS SYSTEMS LTD.

Jessop House, 30 Cambray Place

Cheltenham, Glos GL50 1JP United Kingdom

NFC Mailing Module

PDP-11 Operating System: CTS-300, Micro/RSTS, Micro/RSX,
RSTS, RSX, RT-11

PRO Operating System: CTS-300, PRO/UNIX™, RT-11, TSX-11,
XENIX™

Keywords: • List processing

This product, written in DIBOL, provides mailing list maintenance, continuous-form envelopes, mailing labels, numerical mailing lists, and alphabetical mailing lists. It also can be used with the MCBA accounts receivable module.

VENIX™ is a trademark of VenturCom, Inc. XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$500

Contact: Neil Freeman
(808) 235-3401

NEIL FREEMAN CONSULTANTS
45-449 Hoene Place
Kaneohe, HI 96744

Office Supply/1000

PDP-11 Operating System: RSTS

Keywords: • Accounting • Inventory • Order processing
• Payroll

Office Supply/1000 provides order processing, inventory control, sales analysis, accounts receivable, accounts payable, general ledger, payroll, word and list processing, and key customer system.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Frank Zimmer, President
(201) 231-9400

UNITRONIX CORP.
50 County Line Road
Somerville, NJ 08876

Officeman

PDP-11 Operating System: RSTS, RSX

Keywords: • Electronic mail • Information management
• Word processing

This integrated electronic office system includes word processing, electronic mail, forms and memoranda generation, personal and corporate filing and retrieval, calendars, check lists, appointments and resource scheduling, and other key management, professional, and secretarial applications. The system can interface with existing/planned data processing applications and with external systems such as Telex, word processors, personal computers, and so on. The system has been used in the areas of oil exploration and production, manufacturing and distribution, financial services, central government, and education.

A version of this product is available for VAX computers.

Price: \$10,000 - \$35,000

Contact: Dr. C. V. D. Forrington
0242 42115

CORPORATE BUSINESS SYSTEMS LTD.
Jessop House, 30 Cambray Place
Cheltenham, Glos GL50 1JP United Kingdom

PER-FORM™ (Personalized Form Letters)

PDP-11 Operating System: RSTS

Keywords: • Forms management • List processing
• Text management • Word processing

This on-line package interfaces a mailing list with a letter developed with the RUNOFF utility and creates a personalized letter. PER-FORM allows up to nine personalized fill-ins in the body of the letter and prints the personalized envelope.

PER-FORM does not claim to be a word processing system. Rather, PER-FORM is an affordable, practical software complement for any company or firm using RUNOFF.

A version of this product is available for VAX computers.

Price: \$800

Contact: Nathan I. Lieberman
(812) 479-6951

EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue
Evansville, IN 47714-2994

Plessey-CALC

PDP-11 Operating System: RSTS, RSX, RT-11, TSX-PLUS™

Keywords: • Calculation aids • Decision support
• Financial analysis • Spreadsheets

The Plessey-CALC electronic worksheet provides the framework for business and scientific operations. Plessey-CALC can simplify expense reporting, tighten inventory control, improve sales reporting and forecasting, develop sales quotations, and make business projections. Plessey-CALC is fully integrated with Plessey-WP and is ideal for either the minicomputer or the microcomputer environment. Plessey-CALC is programmed in assembly language.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$500 - \$2500

Contact: Software Department
(714) 540-9945

PLESSEY PERIPHERAL SYSTEMS
17466 Daimler Avenue
Irvine, CA 92714

Plessey-WP (Plessey Word Processor)

PDP-11 Operating System: RSTS, RSX, RT-11, TSX-PLUS™

Keywords: • Data base management • Documentation tools
• List processing • Word processing

In addition to the standard word processing functions, this powerful, easy-to-use word/list processing package allows PDP-11 and LSI users to create an input screen, generate a data base, enter data, sort the data on any field, and then list the data or merge it into any user-

defined form or letter. The word processing section consists of a full-screen editor that provides cut, paste, search and replace, insert field from list processing file, an on-line help menu, load all or part of another document, and so on. The output formatter supports multilevel subscripts and superscripts, centering, justification, overstrike, underlining, table protect, left or right tabs, automatic hyphenation, an index, a table of contents, date insertion, headers, footnotes, page numbering, word wrapping, variable-character spacing, and multilist levels. Plessey-WP also provides a document directory, a spelling dictionary, and a math package.

The list processor contains facilities for forms generation, input screen and data base creation, prompted data entry, multikey sort/select, and record search. Those functions can be performed by an operator with no programming knowledge.

Because Plessey-WP uses ASCII files, it is a very fast and efficient editor for all text and source files. Plessey-WP, which is written in MACRO-11, supports many different printers and terminals, including the VT52 and the VT100.

Plessey-WP is fully integrated with Plessey-CALC as an option.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$1500 - \$2500

Contact: Software Department

(714) 540-9945

PLESSEY PERIPHERAL SYSTEMS

17466 Daimler Avenue

Irvine, CA 92714

PRO/Office Workstation

PRO Operating System: P/OS

Keywords: • Computer operations • Electronic mail
• Information management • Word processing

PRO/Office Workstation provides an electronic mailbox, document processing, and access to host-based desk management. Designed to work cooperatively with ALL-IN-1 Office Menu, this product includes electronic file cabinets, an application interface to run P/OS applications, and a flow-control facility to provide a flexible user interface.

The system also provides full support for single users; multiple users can access the workstation electronic mail in sequence; two users can simultaneously access the workstation with appropriate dual-terminal configuration. Other features include document processing, desk management, workstation setup, and system management.

Refer to SPD #40.36.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

PS (Personal Secretary)

PDP-11 Operating System: CTS-300, RSTS, RT-11

Keywords: • Text management • Word processing

PS, a portable, general-purpose, multiple-window editor and word processing system, includes the following features:

- **Device independence:** PS operates with any display terminal supporting direct cursor addressing.
- **Application/user independence:** Control keys, escape sequences, and special function key maps are user definable. Those definitions can be forced at startup or entered during the edit session.
- **Flexible command structure:** PS supports a simple and powerful command structure that can be tailored to the user's needs. Complex commands can be built by combining simple commands; one or more keystrokes can be defined to execute those commands. Text formatting and cut-and-paste functions operate on columns of text, as well as linear ranges.
- **Multiple windows:** Several files can be edited concurrently. The display can be split horizontally, vertically, or both at any point to form multiple editing windows.
- **Help facility:** PS's general help facility includes a tutorial, command summaries, and general information. The help facility can be used simultaneously with editing. Help files are normal text files and can be extended by the user.
- **Spatial correctness:** The editor presents spatially correct text. No special characters surround underline or similar overstrike sequences, yet all characters are visible and editable; control characters are easily distinguished from normal graphics characters.

A version of this product is available for VAX computers.

Price: \$100 - \$1000

Contact: Gary Aitken
(303) 487-3342

FINISHED SOFTWARE

P.O. Box 72

Collbran, CO 81624

Q-CALL

PDP-11 Operating System: ULTRIX-11

Keywords: • Data base management • Telecommunications

Q-CALL can be used to create a data base of names, addresses, and phone numbers by alphabetical listing or category. Q-CALL also allows the user to store port configurations for various computer systems and to perform complete autodial functions, using English-language menus.

A version of this product is available for VAX computers.

Price: \$115 - \$695

Contact: Vanessa Abbe
(818) 789-8588

QUADRATRON SYSTEMS, INC.
15760 Ventura Boulevard, Suite 1032
Encino, CA 91436

Q-DATE

PDP-11 Operating System: ULTRIX-11

Keywords: • Scheduling

Q-DATE is an electronic calendar/scheduler consisting of a monthly, a weekly, and a daily display. Q-ONE word processor-compatible function keys allow the user to easily insert, move, replace, copy, delete, and search for appointments. Calendars may be set up with private appointment passwords, and any appointment can issue an alarm.

A version of this product is available for VAX computers.

Price: \$155 - \$995

Contact: Vanessa Abbe
(818) 789-8588

QUADRATRON SYSTEMS, INC.
15760 Ventura Boulevard, Suite 1032
Encino, CA 91436

Q-FORM

PDP-11 Operating System: ULTRIX-11

Keywords: • Data collection • Forms management • Printing

Q-FORM is an interactive screen builder and forms manager that can be used for straight forms design or as a data collection vehicle for other programs, such as data bases or spreadsheets. Fields within a form may be defined as alphabetical, numeric, or both, and limits may be placed on the number of characters. Q-FORM also has complete print capability.

A version of this product is available for VAX computers.

Price: \$395 - \$2000

Contact: Vanessa Abbe
(818) 789-8588

QUADRATRON SYSTEMS, INC.
15760 Ventura Boulevard, Suite 1032
Encino, CA 91436

Q-MAIL

PDP-11 Operating System: ULTRIX-11

Keywords: • Electronic mail • File transfer

Q-MAIL, an electronic mail program, can be used for sending notes and documents to users on the same system or across systems automatically. Q-MAIL uses the Q-ONE word processor to create messages but easily interfaces with other types of editors as well. Features include an undelete "waste-basket" function, in/out baskets, and certified mail.

A version of this product is available for VAX computers.

Price: \$155 – \$995

Contact: Vanessa Abbe
(818) 789-8588

QUADRATRON SYSTEMS, INC.
15760 Ventura Boulevard, Suite 1032
Encino, CA 91436

Q-MATH

PDP-11 Operating System: ULTRIX-11

Keywords: • Calculation aids • Mathematics

Q-MATH works like a standard, full-function office calculator, complete with 24 memory storage locations and "tape." Numbers and alpha characters entered on the on-screen "tape" can be saved to an easily retrievable file. Function key definitions can be displayed on the screen at any time.

A version of this product is available for VAX computers.

Price: \$115 – \$695

Contact: Vanessa Abbe
(818) 789-8588

QUADRATRON SYSTEMS, INC.
15760 Ventura Boulevard, Suite 1032
Encino, CA 91436

Q-MENU

PDP-11 Operating System: ULTRIX-11

Keywords: • Menu handlers

Q-MENU is a multilevel menu utility program used for generating and maintaining menus. Menus can execute any resident programs on a system, regardless of the source language. Operating system commands can also be executed through Q-MENU menus, creating an English-language environment for all users of the system.

A version of this product is available for VAX computers.

Price: \$395 – \$2000

Contact: Vanessa Abbe
(818) 789-8588

QUADRATRON SYSTEMS, INC.
15760 Ventura Boulevard, Suite 1032
Encino, CA 91436

Q-NOTE

PDP-11 Operating System: ULTRIX-11

Keywords: • Data base management • Data collection
• Text management

Q-NOTE is a writing program designed for collecting, indexing, and retrieving any type of information, using an index card editor format.

Primary and secondary key fields may be defined for each on-screen index card and used to sort and retrieve information on the body of the card from the data base.

A version of this product is available for VAX computers.

Price: \$115 – \$695

Contact: Vanessa Abbe
(818) 789-8588

QUADRATRON SYSTEMS, INC.
15760 Ventura Boulevard, Suite 1032
Encino, CA 91436

Q-OFFICE

PDP-11 Operating System: ULTRIX-11

Keywords: • Electronic mail • Forms management
• Word processing

Q-OFFICE, an integrated office automation package designed for ease of use and hardware independence, consists of eight software modules: Q-ONE, word processing; Q-MENU, menu manager; Q-DATE, calendar; Q-MAIL, electronic mail; Q-CALL, phone directory; Q-FORM, forms designer; Q-MATH, full-function calculator; and Q-NOTE, notepad/index program.

A version of this product is available for VAX computers.

Price: \$1860 – \$9200

Contact: Vanessa Abbe
(818) 789-8588

QUADRATRON SYSTEMS, INC.
15760 Ventura Boulevard, Suite 1032
Encino, CA 91436

Q-ONE

PDP-11 Operating System: ULTRIX-11

Keywords: • File management • Printing • Text management
• Word processing

Q-ONE, a function key-oriented, menu-driven word processor, can be used to edit source code as well as to produce advanced, photocomposed documents, using virtually any terminal or printer. Records processing, complete with English-language menus for generating control files, is also included with the package.

Q-ONE allows for complete integration with other software through easy-to-use function keys and predefined glossary files. Sophisticated integration with spreadsheets and data bases can be accomplished by a few simple keystrokes. Q-ONE also lets users manipulate and maintain files as well as move around in the operating system environment without leaving a system of user-friendly menus.

A version of this product is available for VAX computers.

Price: \$595 – \$3000

Contact: Vanessa Abbe
(818) 789-8588

QUADRATRON SYSTEMS, INC.
15760 Ventura Boulevard, Suite 1032
Encino, CA 91436

QM (Quick-Mail)

PDP-11 Operating System: RT-11, TSX-PLUS™

Keywords: • Electronic mail • Planning aids

This fully featured electronic mail and filing system using disk-resident files called mailboxes supports in-house message exchange, desk calendars, to-do lists, annotated archives, and other office automation objects. Security features offer encrypted mailbox files, password protection, and access controls. Special user aids include an integral editor, keyword mailbox searches, deferred (future) message delivery, chronological and random message access, and a full interface to local files and devices. QM uses an easy-to-learn, English-like high-level command language.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$650

Contact: Jack J. Peterson
(804) 740-9244

HORIZON DATA SYSTEMS
1901 Wildflower Terrace
Richmond, VA 23233

RCMMAIL: Mail Merge

PDP-11 Operating System: RSX

Keywords: • List processing • Word processing

This program, written in FORTRAN-77, can print any number of copies of a document or letter. All copies are identical except for the customer's name, address, and so forth. RCMMAIL uses two input files; the first file is the document, and the second file is the mailing list.

Price: \$100 – \$180

Contact: Jan Repsch
(604) 277 02 66

RECOM ENGINEERING LTD.
6200 Sheridan Road
Richmond, BC V7E 4W7 Canada

REPGEN (Report Generator)

PDP-11 Operating System: CTS-300, RSTS

Keywords: • Programming tools • Report writer

REPGEN is a powerful tool that allows non-data processing individuals to use computer resources. Programs that take days for a skilled programmer can be generated in minutes by a novice REPGEN user.

REPGEN creates reports from existing computer files, creates and maintains computer files in on-line or batch mode, and allows inquiry from file to file.

Features of REPGEN include file support, multiple file inquiries, inquiries by any field, a help feature, file updates, sorting, flexible line formatting, data inclusion/exclusion, data security, and production reports.

A version of this product is available for VAX computers.

Price: \$2000 – \$20,000

Contact: Tom Muskiluke
(519) 893-4200

DIGITAL BUSINESS COMPUTERS
133 Manitou Drive
Kitchener, Ontario N2C 1L4 Canada

RNI (WRDPRO—Word Processing/Text Editing)

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Documentation tools • Text management

The RNI utility adds the flexibility of IMPRS file handling to word processing. Text, the format and control of pagination, titling, margin justification, and so on are determined with simple commands. The user can prepare text using any/all data built with IMPRS.

A version of this product is available for VAX computers.

Price: \$1500

Contact: Elvin E. Smith or Forrest E. Weddle
(913) 782-8544

RUF CORP.
1533 E. Spruce
Olathe, KS 66061

ROSTER

PDP-11 Operating System: RT-11

Keywords: • Data base management • List processing

ROSTER maintains name and address lists and has two categories of printouts: directories that show names, addresses, telephone numbers, and so on, suitable for membership directories of organizations; and mailing labels. Multiple-person records can be associated with a given address record, which is useful for church or family-type organizations. Records can be organized into subgroups of a larger organization, such as local chapters of a nationwide organization. A person can be a member of one or more subgroups. Five codes are provided in each person's record for sorting and grouping. Menu selections can be customized for a particular organization. Several printout formats are available.

A special directory printout lists the entries that have been revised within any selected range of dates. Five types of revisions are flagged: new person, address change, other change, dropped, and reinstated. (Revision dates are saved in each record.)

Mailing labels can be printed in alphabetical or ZIP code order. Any subrange of ZIP codes can be specified.

The program is written in MACRO-11 assembly language to achieve rapid response and compact data storage. Variable-length records are used to minimize storage. Abbreviations for commonly used cities can be used to simplify entry and save storage.

Price: \$1500 - \$2000

Contact: Sam Liden

(602) 943-4341

ANALYTIC DATA CO.

548 W. State Avenue

Phoenix, AZ 85021

RSTS Smart Mailer

PDP-11 Operating System: RSTS

Keywords: • List processing • Printing

This system creates and maintains mailing lists of names and addresses and generates address labels. Mailing lists can be created and maintained by adding, removing, and changing individual address entries. Any or all addresses, category definitions, or sublist definitions can be displayed on a video screen. Full addresses, category definitions, and sublist definitions can be printed or written to a disk file. Any mailing list or sublist can be printed on a variety of labels. A standard list document file can be generated for use with DIGITAL word processing systems to produce personalized letters.

Mailing lists contain packed addresses with up to 327 characters. Each list consists of a name, three address lines, two identifiers, a counter, a comment, and up to six user-defined categories. Each category can have a separate descriptive label and data type (alphanumeric, numeric, date, yes/no).

Associated sublists, which are all addresses from a mailing list that meet user-defined requirements, can be created. Each mailing list can be set up differently. For example, a list can be publicly accessible or privately owned. A list can also have different types of address identifiers and have different validations performed on address entry.

Refer to SPD #13.23.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the VAX computer.

Price: \$500 - \$750

Contact: Consult your local DIGITAL sales office (see Introduction).

SCRIPTORIUM II: Word/List Processing**PDP-11 Operating System:** CTS-300, RSTS, RSX, RT-11**Keywords:** • Fund raising • List processing • Word processing

This 2-module multiuser information processing system for use in any business or government environment consists of the Word/List Processing and Mailing/Response Tracking modules:

- Word/List Processing is an industry-standard system with automatic spelling check, subscripting, boldface type, underlining, footnotes, and so on. The system interfaces with several letter-quality printers. Operating instructions are accessed either on the system disk or in a printed manual.
- Mailing/Response Tracking was developed for organizations that maintain voluminous lists (for example, membership, prospects), with the need for predetermined selection criteria. The highlight of this module is the tracking of monetary contributions by members. The proven system is ideal for charitable organizations, such as churches and alumni groups, that desire year-end reporting to members for individual income tax.

The two modules, written in DIBOL, can be acquired individually or as a complete set. Dealer inquiries are encouraged.

Price: \$975 - \$1300**Contact:** Robert L. Metzger
(504) 542-1479

DIGITAL COMPUTER SYSTEMS, INC.
31 Darrell Drive
Hammond, LA 70401

SIMS (Supplies Inventory Management System)**PDP-11 Operating System:** RT-11, TSX-PLUS™**Keywords:** • Decision support • Inventory • Purchasing

This system helps manage supplies inventory by helping you determine when to obsolete items (when stocks of those items are low), assisting you in determining purchase quantities and delivery schedules in order to take advantage of volume discounts, eliminating waste (by watching who gets what), keeping the value of your inventory low (so you have more cash and less of a nonliquid asset), and evaluating department heads (by recording usage levels for each department).

SIMS has facilities for receiving items from up to 200 vendors, issuing items to up to 200 cost centers, and generating users' catalogs and warehouse listings of line items; an inventory valuation report (calculated two ways); stock check by month and year; transaction file reports by vendor number, part number, date, and end-of-month reports (also by cost center, part number, date, and end-of-month report); and monthly usage and average monthly usage reports.

SIMS also maintains files and makes interwarehouse transfers. (The data base can handle identical items stored at multiple locations with multiple prices.)

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$2500

Contact: Leland T. (Tom) Smith, President
(512) 692-0953

DATA PROCESSING SERVICES, INC.
8746 Wurzbach Road, Suite 203
San Antonio, TX 78240

SofGram Electronic Communications

PDP-11 Operating System: ULTRIX-11

Keywords: • Electronic mail • List processing
• Telecommunications

SofGram, a total, menu-driven electronic mail package, allows you to create, send, and receive messages over the Telex, TWX, and DDD networks. The system organizes and files your messages, gives you access to on-line data bases, and informs you when you receive messages. SofGram maintains a data base of everyone to whom you send messages. That data base can be easily organized for mass mailings.

A version of this product is available for VAX computers.

Price: \$500 - \$2500

Contact: David Schneider
(201) 447-3901

SOFTTEST
555 Goffle Road
Ridgewood, NJ 07450

Timeman

PDP-11 Operating System: RSTS, RSX

Keywords: • Scheduling

This integrated time management system for management and professional and administrative support staff is compatible with Minimail, the electronic mail and filing system, and the full Officeman electronic office system. Timeman facilities include personal and corporate diaries, both by day and by month, allowing individual and global entries that can be "private" or "public"; scheduling of meetings, with appropriate responses, such as "can/cannot attend" and "room unavailable"; and personal and project action lists. The system is menu driven, with extensive help facilities, and is easy to use, maintain, and support.

In the United States, contact Lantor Inc., 8055 Massachusetts Avenue, Playa Del Ray, CA 90291.

A version of this product is available for VAX computers.

Price: £1000 - £4000

Contact: P. J. Kemple
0242 584301

CORPORATE BUSINESS SYSTEMS LTD.
Jessop House, 30 Cambray Place
Cheltenham, Glos GL50 1JP United Kingdom

UniplexII Word Processor

PRO Operating System: PRO/VENIX™

Keywords: • Word processing

Memory required: 180K.

This menu-driven word processor, developed by Redwood International, uses softkeys that display available options to the user at all times. On-line help is available. The package includes horizontal scrolling, proportional spacing, extensive cut and paste, mail merge, electronic mail, paragraph numbering, spell checking, and more. Uniplex is written in C.

VENIX™ is a trademark of VenturCom, Inc.

Price: \$795

Contact: Joyce Bielen
(201) 985-8000
UNIPRESS SOFTWARE, INC.
2025 Lincoln Highway
Edison, NJ 08817

User-Mail

PDP-11 Operating System: RSTS

Keywords: • Electronic mail

Memory required: 128K bytes minimum.

This comprehensive, easy-to-use electronic mail system facilitates the exchange of text communications and offers advanced features. Any user can create, edit, locate, forward, print, send, or receive messages. Messages can be created by using the User-Mail messages editor or can be taken from preexisting files. Messages can be sent to individuals, predefined groups, or a list of CCs. Messages can be designated with a specific receipt date. Subprocedures provide for listing valid addressees, message queueing, checking for unread messages, and "unsending" messages. Message encryption is a standard feature that can be used optionally or set on permanently on an individual user basis. A system manager facility provides overall control.

User-Mail is written in BASIC-PLUS-2 and MACRO.

Price: \$2880

Contact: Richard A. Baldwin, Executive Vice-President
(619) 745-6006
USERWARE INTERNATIONAL
2235 Meyers Avenue
Escondido, CA 92025

VC

PDP-11 Operating System: ULTRIX-11

Keywords: • Cost accounting • Decision support
• Financial analysis • Spreadsheets

The VC spreadsheet package provides a worksheet of 1000 rows by 32,000 columns. Calculations can use the normal math operators, as well as a set of extended functions. All calculations are ordered, ensuring correct recalculation when a data value is changed. Data values can be fetched from external processes. Spreadsheets can be saved in either text or binary form, and multiple sheets can be merged. The package uses TERMCAP for complete terminal independence.

Extensive on-line help, an interactive tutorial to introduce the new user to VC, and a quick-reference guide are also included.

A version of this product is available for VAX computers.

Price: \$149

Contact: William J. Ezell
(603) 883-9300

SOFTWARE INNOVATIONS, INC.
440 Amherst Street
Nashua, NH 03063

VF

PDP-11 Operating System: ULTRIX-11

Keywords: • Data entry • Forms management
• Query facilities

This forms-oriented screen management package allows data organized in standard UNIX* record format to be entered, retrieved, and modified. VF provides access to UNIX* for forms so that external programs can be used to validate or provide data. VF uses the University of California at Berkeley TERMCAP package, which permits more than 150 kinds of CRT terminals to be supported.

Data files are simple UNIX* files that can be processed by standard UNIX* commands. Form definition files, which also can be processed by VF, define record presentation on a display screen and validation criteria for data fields.

VF offers both an informative user interface for novices or casual users and a concise interface for experienced users.

A version of this product is available for VAX computers.

Price: \$249

Contact: David R. Dick
(603) 883-9300

SOFTWARE INNOVATIONS, INC.
440 Amherst Street
Nashua, NH 03063

Who's Got the File?**PDP-11 Operating System:** RSTS**Keywords:** • Bar coding

This system, developed by Universal Library Systems and written in BASIC-PLUS, uses bar-coded labels and bar-code wands and scanners to control movement of items. Therefore, at any moment, by accessing the file on line by description or by location, you can determine the location of any item or document.

This system has widespread application; users include large document or record centers, insurance companies, governments, manufacturers, airlines, and hospitals, for patient tracking, X-ray, and patient file control.

A version of this product is available for VAX computers.

Price: \$15,000 - \$40,000**Contact:** Mel J. Endelman
(604) 926-7222

BAR CODE APPLICATIONS INC.
1609 Broadway, Suite A
Bellingham, WA 98225

Word List Processing**PDP-11 Operating System:** CTS-300, RT-11, TSX-PLUS™**Keywords:** • Data base management • Information management
• Text management • Word processing

This user-friendly, simple word and list processor is relatively more efficient than many others that have basic required functions. It follows closely the capabilities of WPS-78 and can be easily installed and operated under CTS-300 and TSX-PLUS. Using TSX-PLUS, customers have as many as seven CRT units on a PDP-11/23-PLUS computer.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$995**Contact:** Sam Wingate, Vice President
(813) 935-8844

AUTOMATION RESOURCES CORP.
2901 W. Busch Boulevard, Suite 309
Tampa, FL 33618

XWORD**PDP-11 Operating System:** RSTS**Keywords:** • List processing • Text management
• Word processing

Memory required: 256KB.

XWORD, written in BASIC-PLUS-2, provides for entering and editing any size letters and documents, as well as comprehensive error

detection and correction. The package provides the user with text editing and word processing capabilities; an intelligent screen editor; character, word, line, and page commands; paragraph and cut and paste; automatic search, macro, abort, and undo commands; list processing and sorting; parametric letter processing; text and document preparation; multiple user/device support; copy, transfer, run-off, and queue commands; a menu-driven system and a help key; document comparison; spell checking and correction; local and remote-station capabilities; and the latest hardware and software technology.

The name and address files are used primarily to store information on organizational members, customers, debtors, employees, vendors, and so on. The letter-processing capabilities provide for mailing inquiry responses, announcements, newsletters, proposals, requests for bids, invitations, contracts, resumes, and more. The text of the document may include positional directives and parameters to be replaced with other information from the user terminal or the name and address file, personalizing each letter or document.

A version of this product is available for VAX computers.

Price: \$1000

Contact: Madlen R. Connor
(614) 231-2130

MBA SYSTEMS AUTOMATION, INC.

3477 E. Livingston Street
Columbus, OH 43227

ZCHART — Business Graphics

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers • Graphics
• Presentation aids

ZCHART is a versatile business graphics package. This portion of the ZETA plotter software produces multicolor line, bar, variance bar, and pie charts created in an interactive session by the user's response to simple, English-language questions. Plot description and data files are stored separately, allowing the user to run new data with an existing chart design or the same data with a different chart design.

ZCHART is a FORTRAN program that makes use of ZETA's Fundamental Plotting Subroutines. The program is designed for easy use by nonprogrammers. Attractive charts can be produced quickly and accurately by answering the simple questions asked by ZCHART.

A version of this product is available for VAX computers.

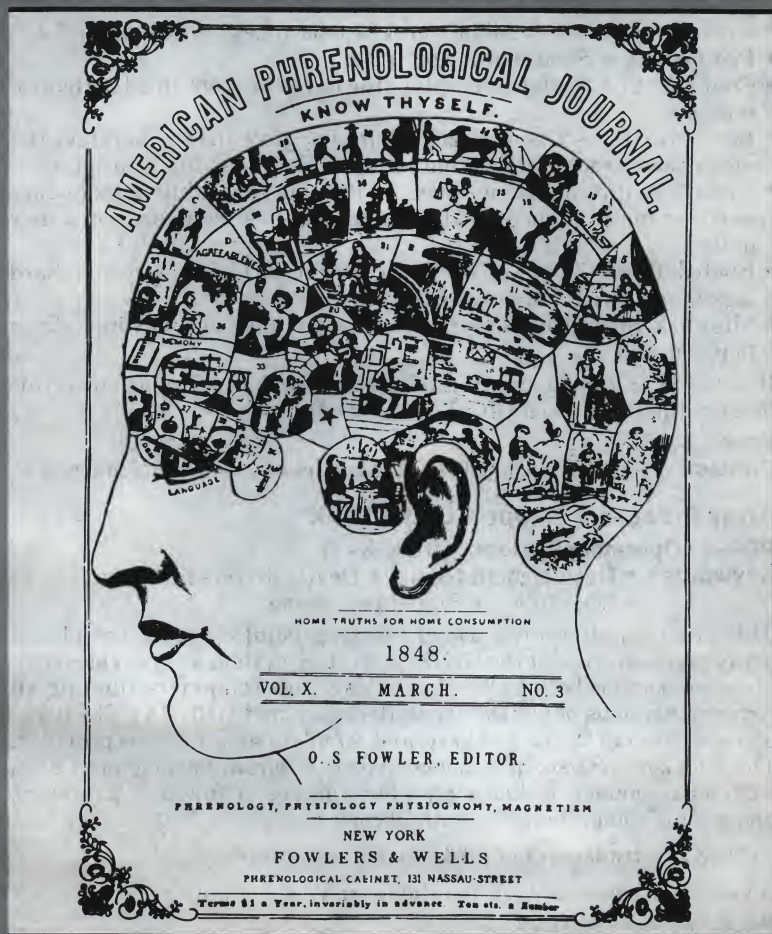
Price: \$1500

Contact: Bill Manos, Product Manager
(415) 372-7568

NICOLET COMPUTER GRAPHICS DIVISION

777 Arnold Drive, P.O. Box 3020
Martinez, CA 94553

Operating Systems



Arabic PRO/Installation and Maintenance

PRO Operating System: None required

Keywords: • Computer operations • Debugging • Diagnostics
• Software utilities

This set of diskettes for the Arabic Professional 380 personal computer provides an additional level of testing above the self-test. The Maintenance Application is a 2-diskette application that runs from a provided floppy-based system diskette. The programs available on this diskette are:

- System unit test — Tests the system module and the optional hardware
- Keyboard key test — Allows most keyboard keys to be tested
- Printer test — Sends data to a printer
- Configuration display — Displays the hardware contained in the system unit
- Bar patterns — Displays color bars (or gray-shaded bars) on the video monitor for systems that have the Extended Bit Map option
- Update maintenance services — Provides the ability to update existing maintenance services to include test software for a new option
- Bigdisk Block Check — Checks the validity of hard disk media (hard disk must have P/OS installed)
- Minidisk Block Check — Checks the validity of P/OS initialized floppy media

Refer to SPD #40.54.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$323

Contact: Consult your local DIGITAL sales office (see Introduction).

Array Processor Support Under UNIX*

PDP-11 Operating System: ULTRIX-11

Keywords: • Development tools • Device drivers/handlers
• Scientific • Signal processing

This program allows the use of Floating-Point System's peripheral array processors under the UNIX* operating system and provides complete support for both PDP-11 and VAX host computers running all common versions of UNIX* (Bell, Berkeley, and ULTRIX). The package is written in C, lex, and yacc, and complete source code is provided. The package consists of a device driver; program development aids, such as assembler, linker, simulator, and vector function compilers; and a set of comprehensive math libraries.

* UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for VAX computers.

Price: \$5000 — \$10,000

Contact: Dr. Peter H. Berens
(619) 484-0074

APUNIX COMPUTER SERVICES
9921 Carmel Mountain Road, Suite 321
San Diego, CA 92129

BOS/5 Operating System

PDP-11 Operating System: BOS/5

Keywords: • Disk utilities • File management
• Software utilities

BOS/5, a single-user operating system, runs on a variety of computers and is completely compatible with multiuser MBOS/5. BOS/5 is used in business environments and supports programming in MicroCobol, accounting applications, data base, report writing, word processing, financial planning, and many vertical business applications. BOS/5 provides a multikey sort and many other utility programs.

Price: \$400 – \$500

Contact: Ron Moore
(214) 484-2717

BOS NATIONAL, INC.
2560 Royal Lane
Dallas, TX 75229

C EXECUTIVE, Release 2.0

PDP-11 Operating System: None required

Keywords: • Data collection • Graphics • Process control
• Real time

This field-proven operating system for embedded applications provides a small, efficient, real-time software environment for programs written in C or Pascal. C EXECUTIVE applications include military avionics, robotic/vision systems, laboratory data acquisition, cardiac monitors, radar control, intelligent terminals, laser printer controllers, process control, and PBX communication systems.

Multitasking applications can execute in a minimum hardware configuration suitable for low-cost, high-volume products. Since it is both ROMable and highly portable, C EXECUTIVE provides an extremely flexible system component. Only main memory is required for operation, although an optional file system may be included. That file system is designed for optimum performance in real-time data acquisition applications. Both contiguous and extendable files are supported. Utility programs are provided for PC-DOS/MS-DOS and UNIX* to read and write C EXECUTIVE file system media.

* UNIX is a trademark of AT&T Bell Laboratories.

Price: \$500 – \$7500

Contact: Anita Fitzgibbons
(215) 628-0846

JMI SOFTWARE CONSULTANTS
904 Sheble Lane
Spring House, PA 19477

Co-Idris™ Operating System

PRO Operating System: Idris™

Keywords: • Development tools • Device drivers/handlers
• Disk utilities

Co-Idris (CI) is a real-time, multiuser, multitasking development system for personal computers using the Intel 8086 processor family. CI is based on the portable PDP-11 and MC68000 versions of Idris used in a variety of software development and embedded application systems. In porting Idris to the 8086 processor family, Whitesmiths sought to bring the powerful features of Idris to PC users without displacing their existing application programs. CI coexists with MS/PC-DOS. With CI installed on a PC, users can alternate between the MS/PC-DOS environment without rebooting and can communicate extensively between the two.

Idris™ is a trademark of Whitesmiths, Ltd.

Price: \$1000

Contact: Geoff Hogan or Phil Sasso
(800) 225-1030

WHITESMITHS, LTD.
97 Lowell Road
Concord, MA 01742

CP/M-86® for DIGITAL

PDP-11 Operating System: RSTS, RSX, RT-11, TSX-PLUS™

Keywords: • File transfer • Personal computing

CP/M-86 for DIGITAL allows Q-bus and UNIBUS machines access to CP/M-86 software. DIGITAL system users can now run CP/M-86 applications simultaneously with their own DIGITAL programs. The package allows the user to use all the high-quality devices (terminals, disk drives, hard disks, printers, and so on) associated with DIGITAL minicomputers for a CP/M-86 environment and gives the user file-transfer capability. If the user is in CP/M-86 and needs access to a DIGITAL file, it can be copied to be readable and writable in CP/M-86 format and vice versa.

CP/M-86 for DIGITAL is available for all LSI-11, PDP-11, and VAX computers. Similar products are available for running CP/M-80 or PC-DOS on DIGITAL LSI-11, PDP-11, and VAX computers. Cardware is available under RT-11, TSX-PLUS, RSX11M/M-PLUS, RSTS/E, VMS, and UNIX.* The software is normally shipped on 8" diskettes. On request, cardware is available on a variety of DIGITAL-compatible media.

CP/M-86® is a registered trademark of Digital Research, Inc. TSX-PLUS™ is a trademark of S & H Computer Systems, Inc. * UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for VAX computers.

Price: \$1595 – \$4795

Contact: Betty J. Pietrzyk
(603) 888-4448

LOGICRAFT, INC.
3 Graham Drive
Nashua, NH 03060

CTS-300

PDP-11 Operating System: CTS-300

Keywords: • Data base management • Language processors
• Programming tools • Real time

CTS-300 is a disk-based single-user/multiuser system that supports commercial applications on small PDP-11-based DIGITAL Datasystems or equivalent configurations. CTS-300 applications are written in DIBOL.

CTS-300 DIBOL, a high-level procedural language for interactive business data processing, is based on the DIBOL Standards Organization's DIBOL-83 definition of the language. CTS-300 DIBOL is highly compatible with DIBOL-83 implementations on other operating systems, including VAX/VMS, RSX-11M-PLUS, Micro/RX, RSTS/E, P/OS, and Professional CTS-300. DIBOL-83 supports a set of language statements called structured constructs. Those statements are designed to complement and facilitate desirable programming practices.

The DIBOL compiler reads a source program and produces an object module. The compiler can produce a source listing with embedded diagnostics.

The CTS-300 package consists of the RT-11 operating system, a choice of three run-time systems, and utilities. Since RT-11 is included in this package, a CTS-300 licensee can order any RT-11-dependent product without reordering a specific license for RT-11.

Refer to SPD #12.09.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$2000

Contact: Consult your local DIGITAL sales office (see Introduction).

DISKIT

PDP-11 Operating System: RSTS

Keywords: • Disk utilities • Software utilities

This set of utility programs is designed to improve the performance of RSTS/E systems. The utilities are:

- DSU — Disk Structuring Utility
- DIR — High-Speed Directory Utility
- RDR — Fast Directory Optimization Utility
- DUS — Disk Utility Subroutines
- OPEN — Open Files Display Utility

1118 Operating Systems

Price: \$1350

Contact: Paul Carey

(714) 895-4790

SOFTWARE TECHNIQUES, INC.

6600 Katella Avenue

Cypress, CA 90630

DSM-11

PDP-11 Operating System: DSM (DSM-11)

Keywords: • Data base management • File management
• Language processors • Programming tools

Memory required: 128K.

This multiuser data management system comprises both an operating system and the high-level language DIGITAL Standard MUMPS, a superset of the American National Standard specification (X11.1-1983). Standard MUMPS is a high-level language whose syntax and semantics are oriented toward solving data base problems. Standard MUMPS can be used by programmers with relatively little programming experience. Although full use of the complete range of Standard MUMPS capabilities requires programming experience, useful working code can be quickly produced by the novice programmer. The text-handling capabilities allow the inspection of any data item for content (such as particular keywords) or for format (such as letters, numbers, or punctuation characters in a string of text). Those capabilities are useful for on-line data entry checking and correction. Other text-handling capabilities include the ability to concatenate text strings and to segment text.

The DSM-11 hierarchical file structure allows users to easily design data file strategies for a particular processing environment. Space does not have to be allocated prior to data entry, since data is stored dynamically. Dynamic file storage with variable-length string subscripts allows the user to easily modify or expand the existing data base.

DSM-11 is an on-line program development and data storage and retrieval system. A programmer can rapidly write, test, debug, or modify a program so that a working application is quickly established. A user can enter, inspect, or change data interactively and efficiently.

Refer to SPD #12.18.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the VAX computer.

Price: \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

Dual-Processor RT-11 System

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers • Disk utilities

This set of RT-11 device handlers allows two PDP-11 CPUs connected by a DA11-F bus interface to share the same disk or DECtape controllers: RK11, RL11, or TC11. Each CPU runs its own RT-11 operating system, with a small foreground job on one system dedicated to supervising disk and DECtape I/O for the other system. A disk or DECtape controller performs DMA transfers directly to the bus of either CPU, so that special memory buffers are not needed to pass data between systems. DECUS number 11-436.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Everhart/Hoffing RSX Collection

PDP-11 Operating System: IAS, RSX

Keywords: • Disk utilities • Presentation aids
• Programming tools • Software utilities

This collection of utilities, subroutines, and games for use with RSX-11M is generally documented in README and .HLP files and is intended for use by experienced programmers. The collection includes a utility to list BRU tapes (BRUDIR), a high-speed tape-to-disk/disk-to-tape reproduction program that uses disk container files (BIGTPC), an updated version of DDT22, multifile virtual disk support, a maze game, and other software.

No guarantees are made as to the completeness, usability, or quality of the programs on this tape. The material has not been checked or reviewed by DECUS, and documentation may or may not be included.

Documentation is on magnetic media. DECUS number 11-SP-34.

A version of this product is available for VAX computers.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

GSYS.BAS: System Management Utility

PDP-11 Operating System: RSTS

Keywords: • Diagnostics • Disk utilities • Printing

This system management utility for the RSTS/E V7 operating system gives needed information about the system, without the problems encountered with the VT50PY or some other similar program. Some information this program displays follows:

- The small buffer count is displayed on the screen; if the count drops below 100, the number flashes.
- The number of jobs and the maximum number of jobs are also displayed on the screen; when the system is full, they flash.
- The rest of the display is made up of the first 10 message receivers. On each receiver, the job name, job number, and receiver ID are displayed.

- On the line printer and batch spoolers, a special text is also displayed if a file is being printed or a batch stream is being run. For line printers, that text contains the file name being printed, the file size, and what block is being printed.
- Jobs on the system (the job's PPN, job status, job name, and keyboard number).
- Disk drive on the system (the pack ID, number of opened files, and free space are displayed).
- To minimize typing, the program function keys and the special keypad mode are used.

DECUS number 11-582.

Restrictions: The user must be in a privileged account, or the program must be compiled with a privileged protection code.

Note: This program is not system or terminal independent. Due to the massive number of PEEKs and other system table references, any changes by DIGITAL to RSTS/E's internal structure could cause problems with this program. Even with these restrictions, this program could be helpful to anyone managing a RSTS/E system.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

H-CHAMP

PDP-11 Operating System: ULTRIX-11, XENIX™

Keywords: • File management • Pre- and postprocessors
• Software utilities

H-CHAMP, an applications environment, is a commercial interface that provides utility software tools for multiuser microcomputer systems. It provides a user-friendly environment so that end users need never deal with the operating system. Optional modules deliver utility tools to speed and simplify sorting, information handling, file archiving, and report modifying. Additional H-CHAMP modules feature procedures, automated batch processing, report scheduling, and print formatting. H-CHAMP runs on the de facto standard operating systems for 8080/8085/Z80, 8086/8088, Z8000, and 68000 families of hardware.

The H-CHAMP Core Module includes user menus, access and security, the shell, housekeeping, mail, and directory and file handling. H-CHAMP optional modules are H-CHAMP + I Module, sorting and information handling; H-CHAMP + II Module, archiving and text formatting; H-CHAMP + III Module, procedures and batch processing; and H-CHAMP + IV Module, report scheduling, formatting, and print control.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$995

Contact: Lew Silverstein
(408) 246-8300

HELMSMAN SYSTEMS, INC.
1030 S. Winchester, Suite 205
San Jose, CA 95128

IAS (Interactive Application System)

PDP-11 Operating System: IAS

Keywords: • Development tools • Real time

This general-purpose operating system runs on the PDP-11/23 through PDP-11/70 central processors. Through the sysgen process, one of the following three operating modes of the system is selected:

- Real time — A multitasking system primarily for real-time applications
- Multiuser — A real-time system with a time-sharing scheduler for efficient multiterminal support
- Timesharing — A superset of the other two modes that includes all the capabilities of the IAS system

IAS provides program and data protection, an easy-to-use interactive and batch program development interface that operates concurrently with real-time processing, general time-sharing services for up to 32 simultaneous users, and an interactive interface for the system operator to allocate system resources in time-sharing mode.

Refer to SPD #14.65.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$8000

Contact: Consult your local DIGITAL sales office (see Introduction).

IAS MAIL

PDP-11 Operating System: IAS

Keywords: • Electronic mail

Memory required: 16KW.

This utility gives each user a "mailbox" for sending and receiving messages. A "letter" is deposited in the recipient's mailbox, and only the recipient can retrieve it from the mailbox. If the recipient is logged in when the letter is sent, the message "You have Mail!" appears on the terminal, accompanied by a beep. If the recipient is not logged in, that message appears next time he or she does log in and every time thereafter until the mailbox is emptied. IAS MAIL supports mailing lists, "carbon copies," and self-reminders. DECUS number 11-726.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Idris™ Operating System

PDP-11 Operating System: Idris™

PRO Operating System: Idris™

Keywords: • Computer operations • File management
• Software utilities • Text management

Idris consists of a real-time, multitasking executive with integrated utilities for program/system control, file and text manipulation, and multiuser support. Idris can be crossed to a variety of machines and includes a sophisticated set of software tools, including more than 80 utilities. Also included are standard utilities, such as a context-sensitive text editor, a powerful "shell" command interpreter, sorting and word processing tools, and a comprehensive set of portable program development utilities. Facilities are also provided for document formatting and networking.

Idris™ is a trademark of Whitesmiths, Ltd.

Price: \$1000 – \$2500

Contact: Susan Ferber

(617) 369-8499

WHITESMITHS, LTD.

97 Lowell Road

Concord, MA 01742

Lock-11

PDP-11 Operating System: RSTS

Keywords: • Security

Lock-11 provides multiple levels of security for a RSTS system. Access to the system is controlled by a hardened security file.

Privileged passwords are no longer readily available. User IDs can be given for dial-in or other multiply accessed ports. Specific ports or user IDs can restrict access to certain accounts only and within day/time restrictions. A list of user-defined alarm keyboards receives all violation information. Ports can be disabled when a probe is detected.

Safe-11, a menu environment, is included. Once logged in, a nonprivileged user can be contained within that space, with no possible exit save logout. LCKDPY.TSK, the system manager's observation platform and ultimate macro systat, and DYNPRI.TSK, a priority tuner and independent system verification tool, round out the package.

Price: \$1250

Contact: R. D. Mallery, V.P.

(215) 542-7008

ON TRACK SYSTEMS

P.O. Box 245

Ambler, PA 19002

M (MUMPS)**PDP-11 Operating System:** M (MUMPS)

Keywords: • Data base management • Financial management
• Health care • Language processors

This easy-to-use high-performance programming system provides a complete software environment for developing and running application programs. A language, a data base system, and a set of utilities are included.

Structured around ANSI-Standard MUMPS, a data base-oriented language, this system offers significant advantages in applications requiring frequent file access. Some of those applications are billing and accounting, order entry, word processing, office automation, and medical record keeping. Featured advantages include fast software development; high throughput and rapid response; a dynamic, fully integrated data base system; interactive programming; easy operation; and growth through multiprocessing.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Robert Atlas

(617) 227-1555

INTERSYSTEMS CORP.

210 Commercial Street

Boston, MA 02109

M/11 +**PDP-11 Operating System:** None required

Keywords: • Compilers • Data base management
• Language processors • Software utilities

This easy-to-use programming system includes a MUMPS language processor, a dedicated operating system, a data base system, and more than 90 utility programs. M/11+ provides substantial performance increases over other PDP-11 MUMPS operating systems. Converting a PDP-11 computer to M/11+ can eliminate the need for more PDP-11s or an expensive upgrade to the VAX computer. Expensive down time, learning the complex VMS operating system, hiring new operations staff, and increased hardware maintenance costs are also eliminated.

This cost-effective, easy-to-use system for a new MUMPS installation allows smaller, less costly computers to achieve the high output of larger, more expensive systems. M/11+ offers faster processing — a compiled code quadruples language throughput. Quicker program development through built-in interactive debugging and a complete ANSI Standard applications compatibility, including such MDC Type A enhancements as the NEW command, parameter passing, user-defined functions, and improved numeric format, are provided.

1124 Operating Systems

Price: Available upon request

Contact: Robert Atlas

(617) 227-1555

INTERSYSTEMS CORP.

210 Commercial Street

Boston, MA 02109

MBOS/5 Operating System

PDP-11 Operating System: MBOS/5

Keywords: • Disk utilities • File management
• Software utilities

MBOS/5, a multiuser operating system, runs on a variety of computers and is completely compatible with single-user BOS/5. MBOS/5 is used in business environments and supports programming in MicroCobol, accounting applications, data base, report writing, word processing, financial planning, and many vertical business applications. MBOS/5 provides file sharing, record locking, print spooling, foreground/background working, multikey sorting, and a comprehensive set of utility programs.

Price: \$1050

Contact: Ron Moore

(214) 484-2717

BOS NATIONAL, INC.

2560 Royal Lane #228

Dallas, TX 75229

Micro/RSTS

PDP-11 Operating System: Micro/RSTS

Keywords: • Development tools • Device drivers/handlers
• Language processors • Microprocessor development

This multiuser general-purpose time-sharing operating system for MicroPDP-11 computers provides a run-time and program development system that is a subset of RSTS/E, Version 8.0. BASIC-PLUS development is available with the base system. An optional application development kit is available for program development using MACRO-11 or high-level compilers.

Easy-to-use Micro/RSTS features support for up to 14 terminals and 10 jobs; interactive timesharing; dynamic allocation of system resources; extensive file processing, including file-sharing and protection mechanisms; interjob communication; disk file backup and restore utilities; line printer spooling to allow users to share a printing device; FMS applications support; a BASIC-PLUS development environment; SORT-11, DIGITAL's standard sort package for PDP-11 systems; DCL — DIGITAL Command Language — which prompts users for input; extensive on-line help files; customer installability; EDT, DIGITAL's easy-to-use, flexible text editor; documentation specifically for the new user; and support for all RSTS/E standard run-time environments.

Micro/RSTS consists of the required Base System and the optional Application Development Kit.

Refer to SPD #18.12.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$100 – \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

Micro/RXS

PDP-11 Operating System: Micro/RXS

Keywords: • Development tools • Diagnostics
• Microprocessor development

This multiuser general-purpose operating system provides a run-time and program development system based on RSX-11M-PLUS, Version 3.0. The system features ease of use, customer installability, extensive help files, a pregenerated system, transportability, DIGITAL Command Language (DCL), error logging, named directories, DIGITAL's easy-to-use screen editor (EDT), and documentation for the new user.

The Micro/RXS Base Kit and a PDP-11 general-purpose license must be purchased to use Micro/RXS. The Micro/RXS Advanced Programmer's Kit is an optional package that requires the purchase of the PDP-11 general-purpose license and the Micro/RXS Base Kit. The Base System Kit includes software and documentation to provide operating system services to an application, including device support and utilities. The Advanced Programmer's Kit provides software and documentation to support native MACRO-11 and privileged program development. The Advanced Programmer's Kit also includes the Data Terminal Emulator and File Transfer Utility (DTE/MFT), which allows easy file interchange among the Micro/RXS system and other PDP-11 RSX systems, Professional systems, and VAX/VMS systems with VAX-11 RSX. ANSI magnetic tape support is included in this kit.

Refer to SPD #14.28.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

MIIS Standard

PDP-11 Operating System: MIIS

Keywords: • Application development • Data base management
• Development tools • Interpreters

MIIS Standard is a computer software environment for the development and operation of application programs in such areas as timesharing, user/computer interaction, character string data, and complex relationships among data. The MEDITECH Interpretive Information System (MIIS) includes the MIIS Standard operating system, the MIIS Standard programming language, the MIIS Standard language interpreter, a structured data management system, a complete set of utility

programs, and complete documentation, including an interactive, on-line training program.

The MIIS Standard operating system schedules the use of the computer's resources and performs the operations specified by application programs. Features include interactive applications programming, testing, and debugging; support for more than 100 simultaneous users; timesharing; support for many different data bases on the same computer; and stand-alone operation.

The easy-to-learn language interpreter translates application programs into actions carried out by the operating system. The system supports a single language, which is also called MIIS Standard. Language features include extensive string-manipulation functions; complete device independence for input and output; terse, space-saving syntax; and built-in syntax for accessing and addressing data base elements.

MIIS Standard uses a single, hierarchical, balanced-tree data management structure to store disk-based data. Programmers can create complex data bases while preserving economy of storage and speed of data access. The programmer need be concerned only with the logical structure of the data; MIIS automatically manages its physical storage.

The utility programs include facilities for monitoring system activity and loading, editing and relocating programs and data, measuring allocation and use of disk space, repairing damage done to system structures by hardware failures, and making back-up copies of on-line and archival data.

Price: Available upon request

Contact: Meditech

(617) 329-5300

MEDITECH

Meditech Circle

Westwood, MA 02090

MIIS/MAGIC (MEDITECH Interpretive Information System)

PDP-11 Operating System: MIIS/MAGIC

Keywords: • Application development • Data base management
• Development tools • Interpreters

MIIS/MAGIC is a software environment for the development and operation of application programs. The system includes:

- MIIS/MAGIC operating system, which schedules the use of the computer's resources and performs the operations specified by application programs.
- MIIS/MAGIC language interpreter, which translates application programs into actions executed by the operating system. The system supports a single language, also called MIIS/MAGIC.
- MIIS/MAGIC data-management system, which uses a single hierarchical balanced-tree structure to store disk-based data. Thus, programmers can create complex data bases while preserving economy

of storage and speed of data access. The programmer need be concerned only with the data's logical structure; MIIS/MAGIC automatically manages physical storage of the data.

- MIIS/MAGIC utility programs, including monitoring system activity and loading, editing and relocating programs and data, measuring allocation and use of disk space, repairing damage done to system structures by hardware failures, and making back-up copies of on-line and archival data.

Complete documentation, including an interactive on-line training program, is available.

A version of this product is available for VAX computers.

Price: \$15,000

Contact: Meditech
(617) 329-5300
MEDITECH
Meditech Circle
Westwood, MA 02090

MONITR: A Display Program for RSTS/E

PDP-11 Operating System: RSTS

Keywords: • Debugging • Security • Statistics

Memory required: 11KW.

MONITR dynamically monitors statistics about a specified job. This program is useful for debugging programs, as it gives a monitor-point-of-view picture of the program. MONITR is also useful for keeping track of suspicious activities. DECUS number 11-622.

Restrictions: Requires large file support SYSGENed in RSTS/E monitor.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

MOS-11 (Memory-Only System)

PDP-11 Operating System: RSX

Keywords: • Real time • Software utilities

MOS-11 systems are designed to perform under rugged operating conditions, such as a protected marine environment or in a moving vehicle. MOS-11 uses RSX-11 as a nucleus; thus, the applications from an RSX-11M system can be moved to a MOS-11 system with no changes — provided the application is using 3.75MB or less of disk space. The software is designed to run with or without disk drives but to run 20 times faster than an equivalent floppy disk system. Thus, if the disk drives fail or are turned off, the system will keep running. The MOS-11 software is useful to any industry in which it is important to keep a system running without interruption or in which using hard disk drives is not possible, as in a moving vehicle or in an oil field.

Price: \$1995 +

Contact: Sandra K. Graham, Operations Manager
(617) 894-3278

ADVANCED COMPUTER SYSTEMS, INC.
250 Prospect Street
Waltham, MA 02154

MRRT-11 (Memory-Resident RT-11)

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers • Systems communications

This memory-resident run-time version of the RT-11 Version 4.0 operating system operates on a PDP-11/03, PDP-11/23, or SB11 microcomputer. MRRT-11 provides a subset of the RT-11 Single-Job (SJ) run-time environment for the execution of application programs on a memory-based computer. Although MRRT-11 provides support for reading and writing to an RT-11 mass-storage device, the system is not dependent on any mass-storage media for execution.

Application programs written in MACRO-11 or FORTRAN IV must be created, assembled or compiled, and linked on a host RT-11 system. The MRRT-11 BUILD utility program is then used to build an MRRT-11 run-time system consisting of DIGITAL-supplied monitor and handler files and user-supplied application programs and data files. The resulting MRRT-11 run-time system is then transported from an RT-11 host system to an MRRT-11 target system for execution either manually on a TU58 DECtape cartridge or by the MRRT-11 down-line load facility.

MRRT-11 requires an RT-11 Version 4.0 system for program development and system generation. Some software components in the MRRT-11 distribution kit run on the host; some, on the target system.

Refer to SPD #12.17.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$192 - \$3055

Contact: Consult your local DIGITAL sales office (see Introduction).

Observer

PDP-11 Operating System: RSX

Keywords: • Data base management • Data collection
• Networking • Statistics

This network monitoring system for Phase III and Phase IV DECnet networks runs as a layered application on the RSX-11M or RSX-11M-PLUS operating system and does not require additional hardware or software on the remote nodes to be monitored. Observer uses the Network Information and Control Exchange (NICE) protocol and the Network Management Listener on remote hosts to monitor the Data Link Layer (level 2), Routing Layer (level 3), and End Communication Layer (level 4) of the DECnet software.

Observer modules combine to form a comprehensive monitoring system. The central component of Observer is a data-acquisition subsystem that periodically polls nodes within the network to obtain traffic, event, and error counters. The network manager has full control over which nodes are polled and the polling rate. The data-acquisition subsystem reduces the raw data collected into a manageable and meaningful set of statistics and event data, which are then passed on to the Observer data-logging subsystem.

The data-logging subsystem filters and logs both statistical and event data. Statistical data is periodically logged to a data base file at a user-selectable rate. Event data is filtered and written to a combination of on-line video displays, hard-copy printer, and event data base file.

The Command/Display subsystem provides a forms-oriented command interface to Observer. That interface provides on-line video displays of selected error statistics, traffic statistics, and status information. The user can select the network element, type of information, and level of detail to be presented.

The user can build and manipulate various data bases maintained by Observer, including the Network Element Reference Data Base. That data base contains a description of all nodes and links in the network, including such details as system type, type and version of operating system and network software, system location, name and number of the system manager and customer service contacts, and many other useful details. Easy-to-use display utilities are provided to retrieve that information.

Refer to SPD #13.18.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$3800

Contact: Consult your local DIGITAL sales office (see Introduction).

On-Line Symbolic Region Access Utility for RSX-11/IAS

PDP-11 Operating System: IAS, RSX

Keywords: • Mapping • Programming tools
• Software utilities

Memory required: 19KW.

This utility allows a user to view and optionally modify the on-line contents of an IAS/RSX static/dynamic region. The utility reads and decodes the symbol table file (.STB file) for static regions, constructs an internal table of the RAD50 name and address of each global relocatable symbol, and then uses the internal table to control access to the data. A pseudovisible is always inserted at the base address so that dynamic regions can be accessed. The variable "PSEUDO" will always be at address 140000(octal). The regions to be viewed/modified are defined at run time. Command lines are prompted for and parsed, using the DEC.TPARS routine. The implementation allows 1024 symbols to be placed in its internal tables and can map and access any

region up to 8K words long. If necessary, the utility can be modified to map larger regions. DECUS number 11-669.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

OS/RT (Real Time O.S. Kernel)

PDP-11 Operating System: None required

Keywords: • Instrumentation • Modeling/simulation
• Process control • Systems communications

This real-time multiprocessing operating system kernel for process control, instrumentation, simulation, and communications control applications is fully transportable to a variety of DIGITAL 8-, 16-, or 32-bit processors. OS/RT is developed in a high-level language, C, and is available in object or source code, with unlimited binary rights. OS/RT can be ROM or disk-based and provides the following operating system functions in a well-organized and modular structure: process management, process synchronization management, interrupt handling, memory management, and interprocess communications.

A version of this product is available for VAX computers.

Price: \$3000 - \$8000

Contact: Dennis Rieger
(408) 737-7211

THE DESTEK GROUP
830 East Evelyn Avenue
Sunnyvale, CA 94086

p-System™ Version IV.2.1

PDP-11 Operating System: p-System™

PRO Operating System: p-System™

Keywords: • Application development • Data base management
• File transfer • Word processing

The p-System is a fully functional programming environment designed for text processing and application execution. Combined with a p-system language, p-System is also a complete application development system. The system includes a screen editor; a file manager; application services, including Turtlegraphics, printing, and configuration utilities; a command menu; a library manager; the p-machine emulator; and a documentation package.

p-System™ is a trademark of Pecan Systems, Inc.

Price: \$79.95 - \$799.95

Contact: Eli Willner

(718) 851-3100

PECAN SOFTWARE SYSTEMS, INC.

1410 39th St.

Brooklyn, NY 11218

PC-11 (Process Control Operating System)**PDP-11 Operating System:** RSX**Keywords:** • Data collection • Process control
• Signal processing

Memory required: 32KW.

PC-11 can be used for a wide variety of applications in direct digital control, sequencing, data acquisition, display, and reporting. Applications software development has been reduced to an on-line interactive configuration process during system commissioning. The set of extremely high-level instructions and control functions can be readily extended by adhering to a simple set of programming rules.

No initialization is done at startup, permitting the system to be run for evaluation on a machine with no I/O facilities. DECUS number 11-501.

Note: This program was developed with the following hardware configurations: PDP-11/23, RX02, DLV11J, LA120, VT100, DIGITAL IP11-IP300, and Process I/O System.

Price: \$5 - \$225**Contact:** DECUS (see Introduction)**PC-DOS for DIGITAL****PDP-11 Operating System:** Micro/RSX, RSTS, RSX, RT-11, TSX-PLUS™**Keywords:** • File transfer • Personal computing

PC-DOS for DIGITAL allows Q-bus and UNIBUS machines access to PC-DOS software. DIGITAL system users can now run PC-DOS applications simultaneously with their own DIGITAL programs. The system supports full dynamic animated graphics and gives the access to all the high-quality devices (terminals, disk drives, hard disks, printers, and so on) associated with DIGITAL minicomputers for a PC-DOS environment. The package gives the user file-transfer capability. If the user is in PC-DOS and needs access to a DIGITAL file, it can be copied to be readable and writable in PC-DOS format and vice versa.

PC-DOS for DIGITAL is available for all LSI-11, PDP-11 and MicroPDP-11, and VAX (including the VAX 8600 and MicroVAX I and II computers. Similar products are available for running CP/M-86.® Cardware is available under RT-11, TSX-PLUS, RSX11M/M-PLUS, RSTS/E, VMS, and UNIX.* The software is normally shipped on standard 8" diskettes. On request, cardware is available on a variety of DIGITAL-compatible media.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc. CP/M-86® is a registered trademark of Digital Research, Inc.

A version of this product is available for VAX computers.

Price: \$1851 - \$6331**Contact:** Betty J. Pietrzyk
(603) 888-4448

LOGICRAFT, INC.
3 Graham Drive
Nashua, NH 03060

polyFORTH II

PDP-11 Operating System: Independent, RSX

Keywords: • Compilers • Disk utilities • Language processors
• Programming tools

This multiuser software is designed for the professional who needs a high-performance product backed by a full support staff. This combination operating system/programming language includes FORTH, an interactive, multilevel language; a full complement of debugging aids; and the target compiler for PROM-based applications. The product includes a compiler, interpreters, a multiprogrammer, a text editor, virtual memory, an I/O assembler, a program listing, and disk-copying utilities, as well as date and time support. Application-oriented features include data base support, a math library, and, on some systems, graphics.

A version of this product is available for VAX computers.

Price: \$600 – \$3200

Contact: Judy Pereira
(213) 372-8493

FORTH, INC.
2309 Pacific Coast Highway
Hermosa Beach, CA 90254

P/OS Diskette, Hard Disk, and Hard Disk (Arabic)

PRO Operating System: P/OS

Keywords: • Graphics • Information management
• Menu handlers • Text management

This diskette-based, multiprogramming, priority-structured, event-driven operating system for Professional 300 computers includes P/OS User Interface, P/OS Record Management System, CORE Graphics Library, FMS Clustered Library, FCS Clustered Library, PROSE Editor and EDT, Professional System Overview, and DECnet support. Both the Professional 300 series system and P/OS support the Digital Multinational Character Set. By using eight rather than seven bits to represent a character, the character set can be used to define both the ASCII characters and other characters, including most special Western European characters. The COMPOSE key allows typing composite characters not represented on the keyboard legend. Arabic is supported using the ASMO 449 Standard.

Refer to SPDs #40.16.xx, 40.01.xx, and 40.53.xx when requesting further information on these products from your local DIGITAL sales office.

Price: \$175 – \$783

Contact: Consult your local DIGITAL sales office (see Introduction).

PRO-CP/M®-80**PRO Operating System:** P/OS**Keywords:** • Computer operations • Systems communications

PRO-CP/M-80 allows CP/M and its applications to be used on the Professional. PRO-CP/M-80 allows the migration of existing CP/M applications to the P/OS operating system.

This software requires an optional CP/M softcard that can be placed in any available option slot in either the Professional 325 or the 350. This hardware option contains the Zilog Z-80A microprocessor running at a 4 MHz clock rate and 64K bytes of random-access memory (RAM).

PRO-CP/M-80 uses the diskette storage system for the file storage (96 TPI). Optionally, the hard disk system of the Professional 350 can be used to provide additional storage capacity. The product provides program construction, storage and editing, and assembly and program checkout facilities.

Communication support for PRO-CP/M provides CP/M applications with a means of communication between the Professional and a remote computer system. The File Transfer Program (FILEXFER) transfers text files between CP/M and P/OS, enabling the user to share common text files and to migrate applications to P/OS. FILEXFER is a CP/M program, and all file transfer is performed from CP/M.

P/OS hard disk or diskette is prerequisite.

Refer to SPD #40.18.xx when requesting further information on this product from your local DIGITAL sales office.

CP/M® is a registered trademark of Digital Research, Inc.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

Professional CTS-300**PRO Operating System:** CTS-300**Keywords:** • Compilers • Programming tools
• Software utilities

This disk-based, single-user/multitask system is designed to support commercial applications on a Professional 350 system. Applications are written in DIBOL.

Professional CTS-300 DIBOL is based on the DIBOL Standards Organization's DIBOL-83 language definition and is highly compatible with CTS-300 on PDP-11 systems and DIBOL-83 implementations on other operating systems, including VAX/VMS, RSX-11M-PLUS, Micro/RSX, RSTS/E, and P/OS.

DIBOL-83 supports a set of language statements commonly referred to as structured constructs. Those statements are designed to complement and facilitate desirable programming practices.

The DIBOL compiler reads a source program and produces an object module. The compiler can produce a source listing with embedded diagnostics.

Professional CTS-300 is a packaged software system consisting of RT-11 on the Professional, a choice of two run-time systems, and utilities. Since RT-11 on the Professional is included in this package, a Professional CTS-300 licensee can order any RT-11 on the Professional-dependent product without reordering a specific license for RT-11 on the Professional.

Refer to SPD #40.37.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$995

Contact: Consult your local DIGITAL sales office (see Introduction).

Professional Installation and Maintenance

PRO Operating System: None required

Keywords: • Diagnostics • Disk utilities • Software utilities

This set of diskettes for Professional 300 personal computers provides an additional level of testing above the Self-Test. The Maintenance Application is a 2-diskette application that runs from a provided floppy-based system diskette. The programs available on this diskette are:

- System unit test — Tests the system module and the optional hardware
- Keyboard key test — Allows most keyboard keys to be tested
- Printer test — Sends data to a printer
- Configuration display — Displays the hardware contained in the system unit
- Bar patterns — Displays color bars (or gray-shaded bars) on the video monitor for systems that have the Extended Bit Map option
- Update Maintenance Services — Provides the ability to update an existing Maintenance Services to include test software for a new option
- Bigdisk Block Check — Checks the validity of hard disk media (Hard disk must have P/OS installed.)
- Minidisk Block Check — Checks the validity of P/OS initialized floppy media

Refer to SPD #40.48.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

PRO/TSX-PLUS™

PRO Operating System: RT-11, TSX-11

Keywords: • Development tools • File management

PRO/TSX-PLUS simultaneously supports five terminals (with DIGITAL's quad serial line), a printer, and a communications line on

the Professional 350 and 380. PRO/TSX-PLUS gives each user a multitasking, real-time, RT-11-compatible environment. Now, on the Professional, you can execute the hundreds of applications and utilities available under RT-11 and TSX-PLUS.

PRO/TSX-PLUS is preconfigured for instant installation and maximum performance. User response is maximized with the Adaptive Scheduling Algorithm,[™] exclusive to PRO/TSX-PLUS and TSX-PLUS. Data and directory caching improve disk I/O performance dramatically. A 64KB virtual address space is available to each task, and extended memory is available to tasks using virtual overlays or arrays. Additional features include concurrent program control, record locking, spooled printing, logical disk subsetting, communications with dial-in support, log-on security, and a virtual debugger.

Dial-in capabilities include auto-baud speed control, on-line adjustable baud rates, and on-line terminal set options that enable modem control (if supported by the hardware) and operator privilege that disallows log-on on certain lines. Through the CL facility, users can instantaneously convert a time-sharing line into a spooled printer line or a communications line.

With Process Windowing,[™] each user can control 10 separate tasks with full-screen windowing and instant screen refresh.

Price: \$900

Contact: Gary Manookian
(615) 327-3670

S & H COMPUTER SYSTEMS, INC.
1027 17th Avenue South
Nashville, TN 37212

PRO/VENIX[™] Base System Kit

PRO Operating System: PRO/VENIX[™]

Keywords: • Development tools • Documentation tools
• Graphics • Systems communications

DIGITAL distributes this software under license from VenturCom, Inc., and the American Telephone and Telegraph Company.

This native UNIX* operating system for Professional 350 and 380 computers is derived from AT&T System V, release 2.0 UNIX.* The multi-user, multitasking operating system supports the Professional-series hardware capabilities, including bit-mapped video, floating-point hardware, and memory management. In addition to the standard System V features, such as hierarchical file system, mountable volumes, and interprocess communication (except shared data, which remains the same as in previous PRO/VENIX releases), PRO/VENIX includes Bourne and C shells command interpreters; Berkeley enhancements, including "vi," "termcaps," and "more"; record locking; code mapping; real-time process priorities; clock-tick timings of 1/60th of a second; "sticky memory"; System III document-processing utilities; and kernel reconfiguration without source code.

Refer to SPD #40.56.xx when requesting further information on this product from your local DIGITAL sales office.

VENIX™ is a trademark of VenturCom, Inc. * UNIX is a trademark of AT&T Bell Laboratories.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

RSTS-11 Library Tape 1

PDP-11 Operating System: RSTS

Keywords: • Documentation tools • Programming tools
• Software utilities

This package contains the programs DECUS offered in 1982/1983 as "The RSTS-11 Library Tape 1" (DECUS No. R11-LIB-1), which contained RSTS-11-1 through RSTS-11-109. (There are no files for RSTS-11-88; only documentation is distributed.)

Most of the programs on this tape are believed to be obsolete. The package is intended to be a "grab bag" offering and is a fixed tape that will not be updated. Please order at your own discretion. DECUS number 11-SP-37.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RSTS-11 Library Tape 2

PDP-11 Operating System: RSTS

Keywords: • Documentation tools • Programming tools
• Software utilities

This package contains the programs DECUS offered in 1982/1983 as "The RSTS-11 Library Tape 2" (DECUS No. R11-LIB-2), which contained RSTS-11-110 through RSTS-11-144, plus RSTS-11-146 through RSTS-11-148. (There are no files for RSTS-11-127; only documentation is distributed.)

This "grab bag" offering is a fixed tape that will not be updated. Please order at your own discretion. DECUS number 11-SP-38.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RSTS System Utilities from the University of Tennessee

PDP-11 Operating System: RSTS

Keywords: • Computer operations • Software utilities

This package contains four utilities:

- SPLRUN patch counts pages. If you use the big spooling package and would like to keep track of the pages you print, this patch works fairly well.
- The system monitoring package, MONITR, consists of a monitoring program that runs detached, a keyboard report and maintenance

program, a keyboard data file, message sender, documentation, and a command file for CUSP compiling.

- A public notes system that acts as a billboard.
- Password changers.

DECUS number 11-708.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RSTS/E

PDP-11 Operating System: RSTS

Keywords: • Development tools • File management
• Language processors • Networking

This general-purpose multiuser system is used for interactive timesharing, batch processing, command file processing program development, and special-purpose applications. Up to 127 concurrent terminal users in local and remote locations can, through multiterminal services, interact with application tasks. Without multiterminal services, the number is 63 users. Tasks can share computational, storage, and input/output services provided by the RSTS/E system.

Programs can be written in several languages. BASIC-PLUS and MACRO-11 assembly language are included on RSTS/E systems.

The RSTS/E system comprises the RSTS/E monitor, device drivers, commonly used system programs (CUSPs), and standard software components. RSTS/E features interactive timesharing; dynamic allocation of system resources; user and job privileges; batch-processing capabilities; extensive file processing, including file-sharing and protection mechanisms; magnetic tape processing; a terminal handler designed for interactive environments; shared common code; a software-maintained cache of frequently accessed disk data; intertask communication; disk file and device backup and restore utilities, as well as system operations and access control utilities; system reliability features and system maintenance tools; user command languages (DCL and CCL); system manager definition of user commands; and line printer spooling.

Refer to SPD #13.01.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

RSTS/E Whittier College Package, Part I

PDP-11 Operating System: RSTS

Keywords: • Disk utilities • File management
• Software utilities

Memory required: 16KW.

The package contains BASIC-PLUS programs that allow users to change accounts without knowing the passwords; delete files with 0 blocks; locate and optionally delete large files; set and clear the "protect" bit on a file; create or delete a range of accounts; give a list of the accounts on the system in a compact format; change the ID of a disk pack; provide a list of files that have a privileged protection code; access the "last logged in" data in the GFD for specific accounts, keyboards, and dates; reserve a terminal for a short time; set the "marked for deletion" bit on a file, making it partially invisible; access the data in the GFD and UFD; print the contents of the retrieval blockette in the UFD; and access the data in the date/time blockette of the GFD. DECUS number 11-753.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RSX-11 Magtape Cornucopia

PDP-11 Operating System: IAS, RSX

Keywords: • Device drivers/handlers • Interpreters • Printing
• Software utilities

This collection of programs for the RSX-11D, RSX-11M, and IAS operating systems is offered on 2400' of magnetic tape. Included are a greatly enhanced FOCAL interpreter with string support, English diagnostics, schedulable alarms, and many other enhancements; a null device handler (GB:) for RSX-11D or IAS; a pseudo-terminal handler that allows input to the "terminal" to come from a file and output to the "terminal" to go to another file (even for MCR, when it interacts with the terminal); a greatly expanded version of the LIST/RSX multicolumn list utility; a handler for RSX-11D/IAS for the MBD-11 CAMAC branch driver; a tape-positioning utility (also able to read or write card image ASCII or EBCDIC tape); an indirect MCR routine (PCP); DDT for RSX; a TECO somewhat improved over the version in the RSX-11D Version 6.2 kit (V14), with support for VT01 scope or VT52 scope; and a disk patch/move utility able to read, write, or move blocks by logical block number on a disk.

Some programs are included for convenience, although more advanced versions may be available on SIG tapes. This version of FOCAL is the only one with complete MBD-11 and VERSATEC plot support. FOCAL interrupt handling uses supervisor mode and 18-bit addressing as written. Those features may be conditioned out by the assembler. The TECO "Doctor" demonstration is included too. DECUS number 11-SP-3.

Restrictions: Most privileged tasks assume RSX-11D. The last versions of programs on tape should be used and should be reassembled and rebuilt, if not using RSX-11D. The MAP utility will fail under IAS Version 3. LIST/RSX may behave if many null lines seen (specify number of columns to cure). FOCAL restart uses a global event flag. Last versions of programs on tape should be used where possible, as tape contains multiple copies of some files.

Note: Null device driver (GB) may do extra QIOs to a console now; pseudo-terminal driver added; FOCAL improved and debugged; LIST/RXS enhanced.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RSX-11D Software Collection

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers • Disk utilities
• Mapping • Software utilities

This collection of programs for RSX-11D includes a "garbage" device (Black Hole) handler, a partition map routine, and a disk block patcher able to patch disk blocks by absolute block number in octal RAD50 or ASCII and used for moving blocks around on any RSX-11D device. DECUS number 11-SP-2.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RSX-11D System Utility Package

PDP-11 Operating System: RSX

Keywords: • Disk utilities • File management
• Software utilities

Memory required (octal): MAP, 37,100 bytes; REC, 16,000 bytes; DTY, 30,700 bytes; ACC, 41,500 bytes.

This package consists of four programs:

- MAP depicts usage in terms of blocks allocated. The output (either TI listing or disk file) consists of a map of the logical blocks on the disk. If a block is used, the corresponding word contains the file ID. Additional information is contained in the source listing.
- REC recovers variable-length record files that have been corrupted. Documentation is contained in the source listing. The file SUBR.MAC, which contains general conversion routines that normally reside in a library, is included in the offered magnetic tapes.
- DTY provides an alphabetical directory listing of the directory specified by the user. The number of blocks allocated is displayed for each file and for the directory.
- ACC tabulates accounting information from the data file created by the system accounting task, ACCLOG. Operation and types of reports produced are documented in the source listing.

DECUS number 11-275.

Restrictions: MAP is not suitable for large disks.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RSX-11M-PLUS

PDP-11 Operating System: RSX

Keywords: • Development tools • File management
• Real time

This disk-based multiuser operating system provides a multiprogramming environment and real-time capabilities, using a priority-structured, event-driven scheduler. This superset of the RSX-11M operating system is designed to maximize performance of large memory and general-purpose PDP-11 processors.

Time-shared program development and interactive processing, real-time tasks, and batch streams can execute concurrently. The system's software priority levels enable the user to compile/assemble, debug, install and execute tasks, and run batch streams without affecting real-time response.

The system recognizes 250 software priority levels. The user-specified task priority determines the task's eligibility to execute. A task either can be fixed in a partition to ensure immediate execution when activated or can reside on disk while the task is dormant, making memory available to other tasks. Task checkpointing permits tasks to be displaced from memory so that higher-priority, nonresident tasks can execute.

Memory sizes from 256K bytes to 3840K bytes are supported. Memory is logically divided into partitions in which tasks are loaded and executed. The system controls the placement of tasks within a partition, and automatic memory compaction minimizes memory fragmentation within a partition.

A multiuser program-development facility is provided. The traditional MCR command interface, the easy-to-use DIGITAL Command Language (DCL), and user-written command interpreters are supported.

Tasks can be written in the supplied MACRO-11 assembly language or in optionally available FORTRAN-77, COBOL-81, DIBOL-83, Pascal, and BASIC-PLUS-2. User libraries and shareable libraries are supported.

An extensive set of utilities is provided to facilitate file and system maintenance, error analysis, and program debugging. The RSX EDI line editor and EDT, the DIGITAL standard text editor, are supplied.

Refer to SPD #14.70.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

RSX-11M Real-Time Operating System

PDP-11 Operating System: RSX

Keywords: • Development tools • File management
• Real time

This disk-based real-time operating system runs on any UNIBUS PDP-11 processor and on most Q-bus PDP-11 and MicroPDP-11 processors. RSX-11M provides for the development and execution of multiple real-time tasks (program images), using a priority-structured event-driven scheduler. System generation on either a host PDP-11 or VAX processor allows the user to tailor the software for systems ranging from small 32K-byte systems to large 3840K-byte systems.

Program development and real-time tasks can execute concurrently in systems with at least 48K bytes of memory. The system's software priority levels enable the user to compile/assemble, debug, install, and execute tasks without affecting real-time task response.

A multiuser program development facility is available for systems with a recommended minimum of 64K bytes of memory. LOGIN/LOGOUT, password protection, device-access protection, a round-robin scheduler (running under the real-time executive), and concurrent execution of equal-priority tasks through executive-level swapping are provided. All systems have the MCR command interface. Mapped systems can select the easy-to-use DIGITAL Command Language (DCL), with MCR or DCL selectable at each terminal.

Tasks can be written in MACRO-11 assembly language or in optionally available high-level languages. Shareable libraries and system support for user-created libraries are provided. The EDI and EDT editors, program development utilities, symbol cross-reference processor, interactive debugger, and task memory dump facilities are provided to assist task development and checkout.

The RSX-11M file system provides automatic space allocation and file structures for all block-structured devices. Features include file protection, device independence, and logical device assignment.

Refer to SPD #14.35.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

RSX-11M/FORTRAN Enhancement Package for MINC

PDP-11 Operating System: RSX

Keywords: • Compilers • Graphics • Real time • Scientific

This FORTRAN package consists of seven components: the RSX-11M real-time operating system, Version 4.2; the PDP-11 FORTRAN-77/RSX, Version 5.0; the REAL-11/MNC real-time data acquisition and control library for MNC-series modules, the SSP-11 (Scientific Subroutine Package), Version 1.3; the LSP-11 (Laboratory Subroutine Package), Version 1.2; the RGL/11 (ReGIS Graphics Library) for VT125 bit-map graphics and data plotting, Version 1.1; and the KED (Video Keypad Editor for RSX-11M), Version 1.0.

Refer to SPD #14.44.xx when requesting further information on this product from your local DIGITAL sales office.

1142 Operating Systems

Price: \$4000

Contact: Consult your local DIGITAL sales office (see Introduction).

RSX-11M/FORTRAN Real-Time Package for MINC

PDP-11 Operating System: None required

Keywords: • Compilers • Real time • Scientific
• Text management

This package consists of six components: the RSX-11M real-time operating system, Version 4.2; PDP-11 FORTRAN-77/RSX, Version 5.0; the REAL-11/MNC real-time data acquisition and control library for MNC-series modules the SSP-11 (Scientific Subroutine Package), Version 1.3; the LSP-11 (Laboratory Subroutine Package), Version 1.2; and KED (Video Keypad Editor for RSX-11M).

Refer to SPD #14.74.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$4000

Contact: Consult your local DIGITAL sales office (see Introduction).

RSX-11S Real-Time Operating System

PDP-11 Operating System: RSX

Keywords: • Real time

This memory-based, real-time operating system for a PDP-11 or MicroPDP-11 processor with a minimum of 16K bytes of memory is a fully compatible subset of the RSX-11M disk-based operating system. RSX-11S is designed, however, for the run-time execution of memory-resident application programs and requires the support of a disk-based host system for system generation and program development.

The I/O driver interfaces are identical to those of RSX-11M. Device drivers written for either system can execute on both systems. Any application program that executes under RSX-11S will execute under RSX-11M without change, following a relink of the object program.

As a memory-based system, RSX-11S does not support a file system, nonresident tasks, checkpointing, overlays, or program development. The system does provide a run-time environment for task execution on a memory-based system.

RSX-11S has most of the features and capabilities of the RSX-11M system and supports all the peripheral devices that are supported under RSX-11M, as well as such CPU options as floating-point processors, parity memory, and memory management.

Refer to SPD #09.21.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1000

Contact: Consult your local DIGITAL sales office (see Introduction).

RT-11 on the Professional**PRO Operating System: RT-11**

Keywords: • Development tools • Graphics
• Personal computing • Software utilities

This single-user, real-time operating system for the Professional 300 series is small, fast, and efficient. RT-11 is used as the base for many applications in business, commercial, and scientific environments. The product is capable of both real-time and data processing and offers a full range of system utilities to facilitate interactive program development.

The straightforward design of RT-11 contributes to its inherent ease of use and efficient use of system resources. The operating system requires minimal system overhead, optimizing the available user space for storing programs and data.

The operating system offers the following two run-time environments:

- The Foreground/Background (FB) Monitor provides for the simultaneous execution of up to seven jobs in the foreground and a background job. The real-time function is accomplished in the foreground, which generally has priority on system resources. Functions that do not have critical response-time requirements, such as program development, are accomplished in the background, which operates whenever the jobs in foreground cannot run. Within their priorities, both types of jobs are fully functional programs with access to system capabilities.
- The Extended Memory (XM) Monitor has the features of the FB monitor and supports systems with more than 64K bytes of memory. XM allows programs to extend their size to the full PDP-11 virtual address space of 64K bytes. By program control, a job can allocate and use all available physical memory not used by the monitor or other jobs. A linker option allows user programs to have overlays in extended memory for fast access.

Refer to SPD #40.31.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

RT-11 Single-User Operating System**PDP-11 Operating System: RT-11**

Keywords: • Development tools • File management
• Networking • Real time

This single-user real-time operating system is small, fast, and efficient and has been used as the base for many applications in business, commercial, and scientific environments. Capable of both real-time and data processing, RT-11 also offers system utilities to facilitate interactive program development.

The RT-11 operating system offers the following configurations:

- The SJ monitor enables one job at a time to execute in memory.
- The FB monitor provides for the simultaneous execution of up to seven jobs in the foreground and a background job. The real-time function is accomplished in the foreground, which generally has priority on system resources. Functions that do not have critical response-time requirements, such as program development, are accomplished in the background, which operates whenever the foreground job cannot run.
- The extended memory (XM) monitor has the features of the FB monitor and supports systems with more than 64K bytes of memory.

Refer to SPD #12.01.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1000

Contact: Consult your local DIGITAL sales office (see Introduction).

RT-11/FORTRAN Enhancement Package for MINC (FEP)

PDP-11 Operating System: RT-11

Keywords: • A/D, D/A • Compilers • Language enhancers

This package consists of the following eight components:

- RT-11, Version 5.2, real-time operating system — Supports single-job (SJ), foreground/background (FB), and extended memory (XM) modes of processing. Efficient use of system resources and minimizing system requirements in the CPU and on the mass-storage device, while maximizing system throughput are emphasized.
- FORTRAN IV/RT-11, Version 2.6 — Extended implementation of the FORTRAN language, based on the ANSI FORTRAN (X3.9-1966) Standard.
- REAL-11/MNC, Version 2.2, real-time data acquisition and control library for MNC-series modules — Provides FORTRAN-callable subroutines that control MNC-series modules.
- SSP-11, Version 1.3, Scientific Subroutines Package — Set of more than 100 mathematical and statistical routines commonly required in scientific programming.
- LSP-11, Version 1.2, Laboratory Subroutines Package — Set of FORTRAN-callable subroutines that perform standard analytical tasks encountered in the laboratory and process data acquired by other laboratory data-acquisition software.
- INSTRUMENT Bus Subroutines, Version 2.2 — Library for the control of instruments that communicate by way of the IEEE-488 bus.
- FDT, Version 2.1, FORTRAN Debugging Technique — Sophisticated interactive debugging tool for FORTRAN IV programs. FDT provides step-by-step control of the execution of your program and the ability to examine and change the contents of any variable during program execution.

- RGL/11, Version 1.1, ReGIS Graphics Library for VT125 bit-map graphics and data plotting — Collection of FORTRAN-callable subroutines that support the graphics capabilities of the VT125 terminal. The package provides both picture drawing and data plotting capabilities.

Refer to SPD #15.49.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$4800

Contact: Consult your local DIGITAL sales office (see Introduction).

RT-11/FORTRAN Real-Time Package for MINC (FRP)

PDP-11 Operating System: RT-11

Keywords: • Compilers • Debugging • Real time • Scientific

This package consists of the following seven components:

- RT-11, Version 5.5, real-time operating system — Supports single-job (SJ), foreground/background (FB), and extended-memory (XM) modes of processing. Efficient use of system resources and minimizing system requirements in the CPU and on the mass-storage device, while maximizing system throughput are emphasized.
- FORTRAN IV/RT-11, Version 2.6 — Extended implementation of the FORTRAN language, based on the ANSI FORTRAN (X3.9-1966) Standard.
- REAL-11/MNC, Version 2.2, real-time data acquisition and control library for MNC-series modules — Provides FORTRAN-callable subroutines that control MNC-series modules.
- SSP-11, Version 1.3, Scientific Subroutines Package — Set of more than 100 mathematical and statistical routines commonly required in scientific programming.
- LSP-11, Version 1.2, Laboratory Subroutines Package — Set of FORTRAN-callable subroutines that perform standard analytical tasks encountered in the laboratory and process data acquired by other laboratory data-acquisition software.
- INSTRUMENT Bus Subroutines, Version 2.2 — Library for the control of instruments that communicate by way of the IEEE-488 bus.
- FDT, Version 2.1, FORTRAN Debugging Technique — Sophisticated interactive debugging tool for FORTRAN IV programs. FDT provides step-by-step control of the execution of your program and the ability to examine and change the contents of any variable during program execution.

Refer to SPD #12.63.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$3300

Contact: Consult your local DIGITAL sales office (see Introduction).

RT/EMT (RT-11 Emulator)

PDP-11 Operating System: UNITY

Keywords: • Compilers • Interpreters • Modeling/simulation

RT/EMT gives you an RT-11 environment under the UNIX* operating system. RT/EMT lets you run RT-11 binary programs unchanged directly at the UNIX* command level. The RT-11 command interpreter supports RT-11 keyboard monitor commands, and RT-11 file systems are implemented by UNIX* directories. RT/EMT runs in user mode. No UNIX* operating system changes are required, and the characteristics of the RT V4 SJ monitor are supported.

HCR supplies only the RT/EMT software. Any RT-11 package requires a license from DIGITAL.

* UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for VAX computers.

Price: \$1750 +

Contact: Sales Department
(714) 493-8664

HUMAN COMPUTING RESOURCES CORP.

10 St. Mary Street

Toronto, Ontario M4Y 1P9 Canada

RTMASCOT

PDP-11 Operating System: RT-11

Keywords: • Process control • Real time
• Systems communications

RTMASCOT is the kernel of a multiprocessing operating system for the LSI-11/23 or 23-PLUS with memory management. RTMASCOT provides an extended interprocess communication facility and is suitable for real-time control applications. The design of RTMASCOT encourages the design of modular, well-structured multiprocess applications.

RTMASCOT is compatible with RT-11. Program development and system loading are done under control of the RT-11 monitor. The RTMASCOT kernel keeps the RT-11 run-time monitor in memory, so that RT-11 services can be requested by RTMASCOT-based application programs.

The RTMASCOT kernel is written in C and provides standard interface to programs written in C. FORTRAN, Pascal, and assembly language routines can also be interfaced to the kernel.

Price: \$1000

Contact: Douglas J. Ross, Vice President
(213) 548-4355

ANDYNE COMPUTING LTD.

544 Princess Street, Suite 202

Kingston, Ontario K7L 1C7 Canada

RTPack**PDP-11 Operating System:** CTS-300, RT-11**Keywords:** • Debugging • Device drivers/handlers
• Software utilities

RTPack, an extension to the RT-11 and TSX-PLUS operating systems to increase their power and capabilities, offers the following eight components:

- ZORT is a sort/merge system that is easy to use and integrate into applications, regardless of the language or system used.
- UCOM extends the RT-11 command language by adding standard RT-11 commands and help text to customize your system.
- OD permits program debugging through a debugging window without requiring the program source.
- XREF accelerates the documentation task by combining source and object modules to produce timely, indexed, and meaningful system documentation, simplifying and economizing the entire process.
- YH/YZ/YL provide RT-11 support for the popular multiline interfaces (DH11/DZ11/DLV11J), permit reads and writes from programs, or facilitate the use of RT-11 keyboard commands to move data to and from peripherals.
- TSXGEN builds customized TSX-PLUS systems, using a conversational system generation process.
- RTMEMO provides appointment book and memorandum facilities with an automatic callback or wake-up function.
- KCOM permits the execution of keyboard monitor commands from inside programs, making RT-11 a subroutine library.

Price: \$499**Contact:** Peter McWha, General Manager

(613) 225-8750

LOGICAID LTD.

154 Collonnade South

Ottawa, Ontario K2E 7J5 Canada

SATT: Real-Time Operating System**PDP-11 Operating System:** Independent, RT-11**Keywords:** • Development tools • Microprocessor development
• Real time • Software utilities

This small, modular, stand-alone system library for dedicated EPROM-based systems can be used in industrial control systems, data acquisition systems, automated test units, data communication nodes, distributed slave processors, and display/action controllers. SATT supports command-line editing, character and message I/O; command, option, and argument parsing; real-time functions; serial communications; multitasking operations; utility functions; and ring buffer service. The system can support mass storage.

The system is fully modularized so that only the features in use are resident in the final program. All functions and features are invoked at

link time. The size of SATT varies from .5 to 6K bytes of EPROM, depending on the features invoked. The average application uses 3K bytes of EPROM and .5K bytes of RAM for SATT functions.

Price: \$620

Contact: Paul F. Fitts

(914) 373-9003

INNOVATEK MICROSYSTEMS INC.

Smithfield Road, R1 Box 104

Millerton, NY 12546

SHARE-eleven

PDP-11 Operating System: RT-11

Keywords: • Computer operations

The SHARE-eleven series of multiuser extensions to RT-11 is available in four models: SHARE/100, the low-cost base-line model; SHARE/200, which supports record locking and virtual disks; SHARE/300, which supports 22-bit memory addressing; and SHARE/400, which supports real time. SHARE/100 and SHARE/200 support up to four users; SHARE/300 and SHARE/400 support more than eight processes with sizes of up to 48 kilobytes. All systems are upward compatible.

This product was written and is owned by Hammond Software and has a 90-day warranty. Source codes and back-up copies are not available.

Price: \$500 - \$1500

Contact: Ewald Müssig

+49 551 21044

HAMMOND SOFTWARE

Stiegbreite 1

3400 Göttingen West Germany

SHAREplus

PDP-11 Operating System: MicroPower/Pascal, RT-11

Keywords: • Development tools • Language processors
• Networking

Memory required: 256KB minimum.

SHAREplus is a top-performance multiuser system that is fully compatible with RT-11 and that supports many VAX/VMS features. More than 63 users are supplied with a powerful workspace, with standard RT-11 programs having 62 kilobytes to run in. Extended-memory mechanisms permit programs to access the full four megabytes available on a PDP-11.

Significant extensions have been made to RT-11, including device and file protection, access control, and global memory regions. New SHAREplus commands and services make it look like VMS: for example, multiple logical-names tables, the multiprocess design, new system calls, and some 30 DCL terminal commands. VAMP, a transparent network connection to a VAX/VMS system, is available as an option.

This product was written and is owned by Hammond Software and has a 90-day warranty. Source codes and back-up copies are not available.

Price: \$1100

Contact: Ewald Müssig
+49 551 21044

HAMMOND SOFTWARE
Stiegbreite 1
3400 Göttingen West Germany

SNP11M for RSX-11M and RSX-11M-PLUS

PDP-11 Operating System: RSX

Keywords: • Debugging • Programming tools

Memory required: 1400(decimal) bytes.

SNP11M, snapshot memory dump for RSX-11M, was derived from SNPDMP (DECUS number 11-149). Differences and enhancements include an RSX-11M interface, output to the terminal or to a Files-11 file, flagging of the start of the specified area, and dumping of the PS word, unaltered.

The use of snapshots as a debugging tool has advantages over other methods, such as ODT. A snapshot procedure whose invocations are specified at assembly time is friendlier than one specified at link time.

SNP11M is a module that is linked with the task being debugged. SNPOPN initializes the module and must be executed before any of the others:

- SNPSST specifies the area to be dumped in the event of a synchronous system trap (SST).
- SNAP (macro call) dumps a specified area of memory (octal word format).
- SNPCLS closes the file. That must be done unless the output is to the terminal.

DECUS number 11-458.

Note: The program has not been verified with RSX-11M but should behave no differently than with RSX-11M-PLUS.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

SPM-11M-PLUS (Software Performance Monitor)

PDP-11 Operating System: RSX

Keywords: • Data collection • Real time • Report writer
• Statistics

This high-resolution, low-overhead, event-driven performance monitor collects data both at the system level and for individual tasks. The SPM-11M-PLUS monitor runs on the RSX-11M-PLUS operating system and views the system as a collection of queued resources. Connection points are inserted into the RSX-11M-PLUS executive where the executive enqueues, dequeues, and completes resource requests,

1150 Operating Systems

allowing usage and waiting times to be measured for the following hardware and software resources: CPU, memory, I/O devices, file system, and task loader.

The monitor provides task work-load and systemwide resource metrics and features power data reduction and a report-generation capability.

Refer to SPD #S0.14.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$900 – \$8000

Contact: Consult your local DIGITAL sales office (see Introduction).

SPM-11M (Software Performance Monitor)

PDP-11 Operating System: RSX

Keywords: • Data collection • Real time • Report writer
• Statistics

This high-resolution, low-overhead, event-driven performance monitor collects data both at the system level and for individual tasks. The SPM-11M monitor runs on the RSX-11M operating system and views the system as a collection of queued resources. Connection points are inserted into the RSX-11M executive where the executive enqueues, dequeues, and completes resource requests, allowing usage and waiting times to be measured for the following hardware and software resources: CPU, memory, I/O devices, file system, and task loader.

The monitor provides task work-load and systemwide resource metrics and features power data reduction and a report-generation capability. Other features are a high-resolution time base (10-microsecond KW11-P clock) and low overhead on the system.

Refer to SPD #S0.01.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$900 – \$8000

Contact: Consult your local DIGITAL sales office (see Introduction).

STAR-eleven

PDP-11 Operating System: None required

Keywords: • Networking • Systems communications

This multiprocessor RT-11 extension is a mature local area network extension consisting of a host computer and up to 14 satellite computers. High-speed interfaces operating at up to 1.2 megabaud connect the host and satellites. STAR-eleven can provide more than 100 users with a total of 56 megabytes of main memory, offering a high-performance multiuser environment with the power and simplicity of single-user RT-11. STAR-eleven is available in four models.

This product was written and is owned by Hammond Software and has a 90-day warranty. Source codes and back-up copies are not available.

Price: \$1800 – \$5600

Contact: Ewald Müssig
+ 49 551 21044

HAMMOND SOFTWARE

Stiegbreite 1

3400 Göttingen West Germany

Steinmetz High School Card Reader Monitor**PDP-11 Operating System:** RSTS**Keywords:** • Device drivers/handlers • Software utilities

Memory required: 16KB.

This package consists of three files:

- **READER.BAS** runs detached and monitors the card reader at 10-second intervals. In addition, **READER.BAS** includes four modes of processing: queueing of control files, creation of files anywhere on the system disk, listing of cards on the line printer, and allowing you to disable the reader program for 60 seconds to use the card reader for your own applications.
- **SENDER.BAS** allows the system manager to communicate with the reader program while it is on line to shut down the reader program, suspend it, change the message console, or resume reader operations after a **SUSPEND** command was issued.
- **READER.DOC** contains complete documentation.

The **QUE** program must be defined as a CCL command. DECUS number 11-730.

Price: \$5 - \$225**Contact:** DECUS (see Introduction)**SWAP: Modify Swapping/Shuffling Parameters****PDP-11 Operating System:** RSX**Keywords:** • Disk utilities • Scheduling

Memory required: 4KB.

SWAP is a program to modify the round-robin scheduling interval, shuffler run limit, and the Executive-level disk-swapping interval in the **RSX-11M V4.0 Executive**. **SWAP**'s command syntax is easy to learn and much less cryptic than the **MCR SET** commands that provide the same function on **RSX-11M-PLUS**. A command file simplifies instruction. **SWAP** runs only on **RSX-11M V4.0**, since the data in module **SYSCM** is not present in earlier versions. DECUS number 11-589.

Price: \$5 - \$225**Contact:** DECUS (see Introduction)**TNIX Operating System — Tektronix 856x Series****PDP-11 Operating System:** TNIX**Keywords:** • Development tools • Microprocessor development
• Networking • Software utilities

The **TNIX** operating system runs on the Tektronix 856x series of mini-computers, which are based on the **PDP-11/23** or **PDP-11/73** processors. **TNIX** is based on **UNIX* Version 7** and has been enhanced for microprocessor development work. **TNIX** includes all the standard

1152 Operating Systems

UNIX* features, such as hierarchical files systems, documentation tools, line printer spooling, multitasking capability, powerful shell commands, and native C tools.

The 856x series is an integral part of Tektronix's Microprocessor Development System, which includes emulation systems (TEK8540A) and Pascal and C language development systems (PLANDS and CLANDS) for all popular microprocessors, including 68000/08/10, 8086, 80186, and Z8001/2. Emulation and assembly language support are also available for the Z80, 8085, 6809, 6814C11, and others.

* UNIX is a trademark of AT&T Bell Laboratories.

Price: Available upon request

Contact: Marty Boyesen
(503) 629-1573

TEKTRONIX, INC.
P.O. Box 4600
Beaverton, OR 97075

TSX-PLUS™

PDP-11 Operating System: RT-11, TSX-PLUS™

Keywords: • Development tools • File management

This multiuser, multitasking, general-purpose operating system provides the functionality of the RT-11 operating system for up to 40 users on a time-sharing basis. Most programs that run with RT-11 will run with TSX-PLUS without modification. TSX-PLUS interfaces with standard RT-11 device handlers (XM version) and supports RT-11 utility programs. Logical Disk Subsetting has been implemented in the TSX-PLUS kernel. The TSX-PLUS keyboard commands include most of those provided by the RT-11XM monitor, with the addition of significant enhancements. TSX-PLUS system service calls (EMTs) are compatible with those provided by RT-11XM. The RT-11 BATCH and FORMAT utilities and single-line editing and multiterminal EMTs are not supported.

TSX-PLUS allows a computer to support production use, program development, and real-time control simultaneously. Through the Virtual Line and Detached Job features, individual users have concurrent control over multiple jobs from the same terminal.

Machines with insufficient memory to hold all active jobs benefit from the TSX-PLUS job-swapping facility. With job-swapping selected, idle jobs are swapped to disk. The job-swapping algorithm has been developed to improve overall throughput with minimal effect on system response.

To time share with TSX-PLUS, the user boots to a base-line or single-job RT-11 monitor and then types the command RUN TSX. In a few seconds, the computer system is under the control of the TSX-PLUS multiuser, multitasking monitor.

Generation of TSX-PLUS for a hardware environment can be accomplished in less than one hour. Experienced TSX-PLUS users can completely reconfigure their system in 15 minutes.

TSX-PLUS supports the KED, K52, and TECO editors as well as FASTEXT, SATURN, and others.

Compiling and linking programs under TSX-PLUS can take a fraction of the time required under other operating systems. Languages available for use with TSX-PLUS include MACRO-11, C, COBOL-PLUS, FORTRAN, PASCAL-2, DBL, APL, and BASIC.

The debugging facility allows the programmer to examine and modify a program and to set breakpoints. The program being debugged does not have to be modified or even relinked. The Performance Analysis Facility can be used to monitor the execution time at various locations in a user program. Inefficient code can be identified and program performance optimized.

TSX-PLUS addresses all the available memory up to 4MB on PDP-11s. Up to 40 jobs can be in memory at the same time, allowing rapid switching between executing jobs. Up to 64KB are available to each job, although jobs using virtual overlays or virtual arrays can have all the physical memory not otherwise in use. Large jobs resident in memory execute many times faster than those with overlays on disk.

The TSX-PLUS data and directory caching facilities improve the performance of I/O operations by eliminating most disk I/O for frequently accessed directory and file entries.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$2000

Contact: Gary Manookian, Domestic Sales
(615) 327-3670

S & H COMPUTER SYSTEMS, INC.
1027 17th Avenue South
Nashville, TN 37212

TSXLIB: A Library Implementation of EMTs for TSX-PLUS Version 5.1

PDP-11 Operating System: TSX-PLUS™

Keywords: • Programming tools • Software utilities

This library of FORTRAN-callable routines implements system services that are unique to TSX-PLUS. Like RT-11, TSX-PLUS offers the MACRO-11 programmer system services through RT-11 programmed requests or EMTs. RT-11 provides system services to the FORTRAN programmer through the system subroutine library, SYSLIB. TSXLIB makes the TSX-PLUS EMTs available to the FORTRAN programmer as a library of callable routines. The package includes the MACRO source modules for all the routines, a user's manual, a cross-reference chart, an indirect command file to build the library, and the implemented library.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

ULTRIX-11 Operating System

PDP-11 Operating System: ULTRIX-11

Keywords: • File management • Programming tools

This native UNIX* system, an improved release of V7M-11, Version 1.0, which was derived from AT&T's UNIX* Time-Sharing System, Seventh Edition, is a general-purpose, multiuser, interactive operating system that supports DIGITAL's memory-managed PDP-11 processors and has drivers for most of DIGITAL's peripherals. ULTRIX-11 features include most of those found in Version 7 UNIX* — a hierarchical file system with demountable volumes, compatible device and interprocess I/O, asynchronous processes, a user-selected system command language, more than 100 subsystems, and portability among processors.

ULTRIX-11 also features new hardware support, including J11-based microprocessors, the PDP-11/84, and the MicroPDP-11/SV processors; a kernel floating-point hardware simulator; C shell and job control, VI screen editor, and a source code control system; improved performance, maintainability, and reliability; sublicensing for object code; repackaged technical documentation; and installation and configuration without source code.

Refer to SPD #16.51.xx when requesting further information on this product from your local DIGITAL sales office.

* UNIX is a trademark of AT&T Bell Laboratories.

Price: \$800 – \$2000

Contact: Consult your local DIGITAL sales office (see Introduction).

Uniq™ UNIX* System V

PDP-11 Operating System: Uniq System V

Keywords: • Assemblers • Device drivers/handlers
• Networking • Source code control

This fully supported and enhanced version of Bell Laboratories' famous operating system has such advanced features as the VI full-screen editor, complete termcapping facilities, significantly improved performance over earlier releases in the VAX environment, full support of DIGITAL's new disk drives, interactive graphics facilities, source code control, RJE facilities to IBM hosts, VPM — virtual protocol machine — for network programming of the KMC-11, enhanced network support, and C and FORTRAN-77 compilers, as well as compiler development tools.

Uniq supports UNIX* System V for most available peripherals. Uniq's CTAC (Customer Technical Assistance Center) offers instant access to

the UNIX* support team. Consulting and technical training are available from a staff of Bell System—experienced consultants. A full catalog of UNIX* data bases and software is provided. Berkeley 4.2 BSD is also available.

A version of this product is available for VAX computers.

Price: \$2750 – \$18,600

Contact: Uniq Sales Department
(312) 879-1008

UNIQU DIGITAL TECHNOLOGIES

28 S. Water Street
Batavia, IL 60510

UNITY Operating Systems

PDP-11 Operating System: UNITY

Keywords: • Compilers • Debugging • Disk utilities

VAX UNITY under VMS, derived from AT&T's System III, allows UNIX* to coexist with VMS and requires no special permissions to run. VAX UNITY under VMS features a full C compiler assembler and linkage editor, tools for constructing compilers and interpreters, formatting packages for common documents and for phototypesetters, and programs to check spelling, make tables, and construct bibliographies and mathematical equations. VAX UNITY under VMS also includes more than 100 utilities, such as graphics, electronic mail, computer-aided instruction, system accounting, and security access software.

UNITY for the PDP-11 allows even the largest utilities, such as FORTRAN-77, to be run on the low-end PDP-11/23. Included as part of the system are C and FORTRAN-77 compilers that produce compatible object code, an assembler and linkage editor, a powerful symbolic debugger, tools for constructing compilers and interpreters, a text editor, and typesetting software for correspondence-quality printers and for a phototypesetter. UNITY also provides enhanced device support and file system integrity, including automatic file repair and bad-block handling.

* UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for VAX computers.

Price: \$2100 – \$16,000

Contact: Sales Department
(714) 493-8664

HUMAN COMPUTING RESOURCES CORP.

10 St. Mary Street, Fourth Floor
Toronto, Ontario M4Y 1P9 Canada

USX51 8051 Operating System

PDP-11 Operating System: RT-11

Keywords: • Computer operations • Development tools
• Programming tools • Real time

This multitasking system for embedded applications provides a user-configurable, ROMable, real-time operating system. The system requires less than 3K bytes and features dynamic control of prioritized tasks from start to finish. USX51 provides functions to allow tasks to manage resources, to stimulate and respond to events, to send and receive prioritized messages, to manage free memory, and to use time-oriented delays. USX51 is delivered in source assembly for ease of customization and integration into the user application.

Price: \$1750

Contact: Donald L. Dunstan
(503) 645-5043

UNITED STATES SOFTWARE CORP.

5470 N.W. Innisbrook Place
Portland, OR 97229

USX86 8086 Operating System

PDP-11 Operating System: RT-11

Keywords: • Computer operations • Development tools
• Programming tools • Real time

This multitasking system for embedded applications provides a user-configurable, ROMable, real-time operating system. The system requires less than 2K bytes and features dynamic control of prioritized tasks from start to finish. USX86 provides functions to allow tasks to manage resources, to stimulate and respond to events, to send and receive prioritized messages, to manage free memory, and to use time-oriented delays. USX86 is delivered in source assembly for ease of customization and integration into the user application.

Price: \$1750

Contact: Donald L. Dunstan
(503) 645-5043

UNITED STATES SOFTWARE CORP.

5470 N.W. Innisbrook Place
Portland, OR 97229

USX96 8096 Operating System

PDP-11 Operating System: RT-11

Keywords: • Computer operations • Development tools
• Programming tools • Real time

This multitasking system for embedded applications provides a user-configurable, ROMable, real-time operating system. The system requires less than 3K bytes and features dynamic control of prioritized tasks from start to finish. USX96 provides functions to allow tasks to manage resources, to stimulate and respond to events, to send and

receive prioritized messages, to manage free memory, and to use time-oriented delays. USX96 is delivered in source assembly for ease of customization and integration into the user application.

Price: \$1750

Contact: Donald L. Dunstan
(503) 645-5043

UNITED STATES SOFTWARE CORP.
5470 N.W. Innisbrook Place
Portland, OR 97229

Virtual DECTape System for RT-11 Version 4.0

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers • File transfer

Memory required: 32KB.

A serial interface to a host computer's terminal port provides file storage for an RT-11 system. The system includes a virtual terminal program for RT-11 that runs as a foreground job, a source patch to create the virtual DECTape handler from the TU58 DECTape handler source file DD.MAC, and a companion virtual DECTape file server program for a VAX/VMS host with source code in Pascal. RT-11 files are stored in a DECTape image file on the host computer's disk, which the RT-11 system accesses by means of the virtual DECTape handler communicating with the file server program that runs on the host. The file server program can also transfer VMS files into or out of the DECTape images, thereby providing file communication between the VMS and RT-11 systems. DECUS number 11-736.

Note: The device handler is written to RT-11 Version 4 specifications.

A version of this product is available for VAX computers.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

XENIX™ Operating System

PDP-11 Operating System: XENIX™

Keywords: • Language processors • Programming tools
• Source code control • Text management

XENIX is a fully licensed, commercially enhanced version of UNIX.* XENIX is a multiuser, multitasking product and is available in three packages.

The operating system contains the system kernel and more than 100 utility programs, including a screen-oriented text editor. The XENIX software development system includes the C Merge compiler, which allows users to develop software for both DOS and XENIX from a single set of source code. This system also contains the linker, source code control system, the C libraries, and other utilities. The XENIX text processing system includes formatters for mathematical equations and tables, a spelling checker, and utilities.

1158 Operating Systems

XENIX™ is a trademark of Microsoft, Inc. * **UNIX** is a trademark of AT&T Bell Laboratories.

Price: \$2975 - \$6475

Contact: Lee Tyler

(408) 425-7222

THE SANTA CRUZ OPERATION, INC.

500 Chestnut Street

Santa Cruz, CA 95060

Personal Computing



Camerique

ADE/RSTS: Information Management for Office Professionals

PDP-11 Operating System: Micro/RSTS, RSTS

Keywords: • Application development
• Information management • Programming tools
• Report writer

ADE helps managers, administrative and clerical personnel, and other office professionals manage their own information. ADE users can create and manage information files and produce reports. An on-line tutorial makes ADE easy to learn, and extensive help messages and a self-prompting command structure make ADE easy to use. ADE allows users to produce and use simple applications without learning programming techniques or languages.

Refer to SPD #13.11.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the VAX computer.

Price: \$840 - \$2100

Contact: Consult your local DIGITAL sales office (see Introduction).

ADE/R SX

PDP-11 Operating System: RSX

Keywords: • Application development • Data base management
• Programming tools • Scheduling

PDP-11 ADE/R SX is a nonprogrammer's development software package for small applications requiring processing of character, numeric, and data-oriented information. This productivity tool for nontechnical personnel runs under the RSX-11M and RSX-11M-PLUS operating systems.

PDP-11 ADE/R SX allows users to create their own information base; add, change, or delete data; perform calculations on data; produce simple bar graphs; and write/print reports. Without requiring users to know programming techniques or languages, the package allows personnel to automate simple applications and to use the product's more complex facilities and functions; uses English words for commands, such as MAKE, SAVE, SORT, and has full screen-handling capabilities; prompts the user after each input and has extensive help messages to explain all commands or input required; allows multiple users to copy PDP-11 ADE/R SX-developed data but also allows for user protection of data; allows transfer of data to and from other applications software that uses RMS sequential files — COBOL, BASIC-PLUS-2, and DATATRIEVE; allows transfer of data to and from list processing format files used in word processing software; and performs simple arithmetic calculations.

Refer to SPD #14.27.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the VAX computer.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

Cardware Disk Subsystem

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • File management • Microprocessor development
• Office systems • Programming tools

This solution to the problem of gaining access to data and programs written on other personal computers attaches directly to Logcraft's QCP-11+ and HCP-11 Cardware units that allow for CP/M-86® and PC/MS-DOS to be executed on DIGITAL's LSI-11, PDP-11, and VAX computers. The Disk Subsystem is available as a stand-alone 5¼" double-sided single drive. The Cardware unit can read or write diskettes in a variety of supported formats, such as PC-DOS, MS™-DOS, and CP/M®. The Cardware Disk Subsystem uses a 1-track caching technique to substantially increase performance when accessing consecutive sectors.

CP/M-86® and CP/M® are registered trademarks of Digital Research, Inc. MS™-DOS is a trademark of Microsoft Corp.

A version of this product is available for VAX computers.

Price: \$1095

Contact: Betty Pietrzyk
(603) 888-4448
LOGICRAFT, INC.
3 Graham Drive
Nashua, NH 03060

CrossWord

PDP-11 Operating System: RSTS

Keywords: • File transfer • Word processing

This word processing file transfer and conversion software package transfers word processing files from a DIGITAL VAX or PDP-11 to an IBM PC while retaining all file formatting characteristics. CrossWord supports include DPD's WORD-11 for the VAX and PDP-11 and WordStar, MultiMate, and Word Perfect for the IBM PC. Software resides on both the DIGITAL and IBM computers. CrossWord integrates individual data processing requirements with a corporate information strategy.

A version of this product is available for VAX computers.

Price: \$1200 - \$2300

Contact: Karen Ackland
(714) 970-1515
DATA PROCESSING DESIGN, INC.
1400 N. Brasher
Anaheim, CA 92807

LOAD PDT

PDP-11 Operating System: RT-11

Keywords: • Assemblers • Down-line loading • File transfer
• Systems communications

The PDT11/110 is a memory-only computer. Bootstrap ROMs in the PDT allow a user to down-line load from a host. Two bootstraps are available in the PDT11/110. This program is the host loader protocol to down-line load the PDT, using what is known as the TERMINAL BOOT. Satellite images can be assembled and linked on an RT-11 host and then loaded to the PDT by running this program, with the PDT acting as console. DECUS number 11-390.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

MPS (Menu Presentation Software)

PDP-11 Operating System: ULTRIX-11

Keywords: • Menu handlers • Programming tools

MPS allows you to configure your environment into an easy set of menus that can make your UNIX* system easy to understand.

A version of this product is available for VAX computers.

Price: \$200

Contact: Dr. Blaine T. Garfolo, President
(216) 421-8737

DAYSTROM SYSTEMS, INC.
11206 Euclid Avenue
Cleveland, OH 44106

poly-XFR™ CP/M® Communications

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Data conversion • Diagnostics
• File management • File transfer

This package, developed by Polygon Associates, Inc., St. Louis, MO, features binary/ASCII file transfers between DIGITAL's VT180 CP/M local system or a DECmate CP/M-80 local system and a host system. Host systems include CP/M-86/80 or MS™-DOS running poly-COM, DECmate CP/M-80, VT180 CP/M, RT-11, RSTS/E, RSX-11M, RSX-11M-PLUS, and VAX/VMS systems.

Time-out and error-detection features ensure the integrity of the transferred data. The software runs up to 9600 bps in a local environment and uses full-duplex modems for remote data transfer.

The poly-XFR CP/M Communications package can transfer, store, and retrieve files; use host peripherals; and act as a terminal to the host. With either system, the user can develop programs, transfer data between systems, or toggle the local printer on or off.

The CP/M Communications package includes software that runs on the host and on the local system, respectively. The local software is

composed of a file-transfer program and a terminal emulator. The transfer program sends and receives files from the host. The terminal emulator converts the local VT180 or DECmate to a terminal, giving the user access to all the resources of the host computer. The host software interprets and executes the local program's file-transfer requests. The poly-XFR CP/M Communications command language is executed at the personal computer.

The package serves environments that use distributed development and/or personal computing systems and that need to share data, programs, or peripherals.

DIGITAL distributes this software under license from Polygon Associates, Inc.

Refer to SPD #A0.50.xx when requesting further information on this product from your local DIGITAL sales office.

poly-XFR™ is a trademark of Polygon Associates, Inc. CP/M® is a registered trademark of Digital Research, Inc. MS™-DOS is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$600 – \$850

Contact: Consult your local DIGITAL sales office (see Introduction).

The Printer's Companion

PRO Operating System: P/OS

Keywords: • Forms management • Presentation aids
• Printing • Software utilities

The Printer's Companion allows you to easily and quickly make full use of any printer's computer-settable features directly from the keyboard. Features include the following:

- Your printer can be used as a typewriter using either immediate or buffered (deferred) printing.
- Printing characteristics can be changed at any point in the text. For instance, automatic underlining can be enabled and disabled, a new font or pitch can be specified, and so on.
- An interactive session with The Printer's Companion can be captured in a "Script File" for later "playback" to your printer. This feature allows you to create your own library of special forms, outlines, and other "boilerplate" material. Later editing of the Script File is done with any text editor.
- All keys of the PRO keyboard are definable, allowing function keys to perform multiple operations on the printer. Thus, frequently used sequences of keystrokes and printer functions can be invoked as a single keystroke.
- Printer settings are immediately available on the display or in a report. Additionally, you can set your printer to a predefined set of characteristics on startup of The Printer's Companion.
- Recognition and support of DIGITAL printers is automatic.

- An extensive, well-written, easy-to-understand help facility is available.
- The Printer's Companion uses the PRO-300 menu structure.

Price: Available upon request

Contact: Philip D. Brooke

(617) 262-8660

FUTURE GENERATIONS, INC.

45 Newbury Street

Boston, MA 02116

PRO/Applications Starter Kit for Diskette or Hard Disk

PRO Operating System: P/OS

Keywords: • Data base management • Graphics
• Spreadsheets • Word processing

This set of easy-to-use applications provides basic functionality for the Professional 300 novice. The kit includes PRO/Spreadsheet, an electronic spreadsheet; PRO/Graph, business graphics; PRO/Data-Manager, personal data manager; PROSE Editor; and DECLander Video Game.

P/OS diskette or P/OS hard disk is prerequisite.

Refer to SPDs #40.33.xx and #40.29.xx when requesting further information on these products from your local DIGITAL sales office.

Price: \$399

Contact: Consult your local DIGITAL sales office (see Introduction).

Synergy

PRO Operating System: P/OS

Keywords: • Calculation aids • Data base management
• Graphics • Spreadsheets

This product provides a windowing interface to Professional 300 series computers, along with a set of applications that work in these windows. The windows separate the screen into areas and permit the concurrent display of several applications. Applications include Spreadsheet, Graph, Datamanager (allows record formats to be created by defining a form), PROSE PLUS (an integrated text and graphics editor), Communications, Calculator, and File Services.

P/OS hard disk operating system is required.

Refer to SPD #40.45.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$695

Contact: Consult your local DIGITAL sales office (see Introduction).

UltraCalc®

PDP-11 Operating System: ULTRIX-11

Keywords: • Financial planning • Graphics • Spreadsheets

Memory required: 128KB minimum.

This powerful financial planning and modeling package, written in C, has a powerful command language interface, supports business graphics character sets and color, and allows virtually unlimited spreadsheet size. UltraCalc uses a virtual-memory architecture to store the worksheet. You can enter data in all the cells on your worksheet without running out of memory. You are limited to the amount of disk storage you have, but worksheets with thousands of rows and columns are facilitated.

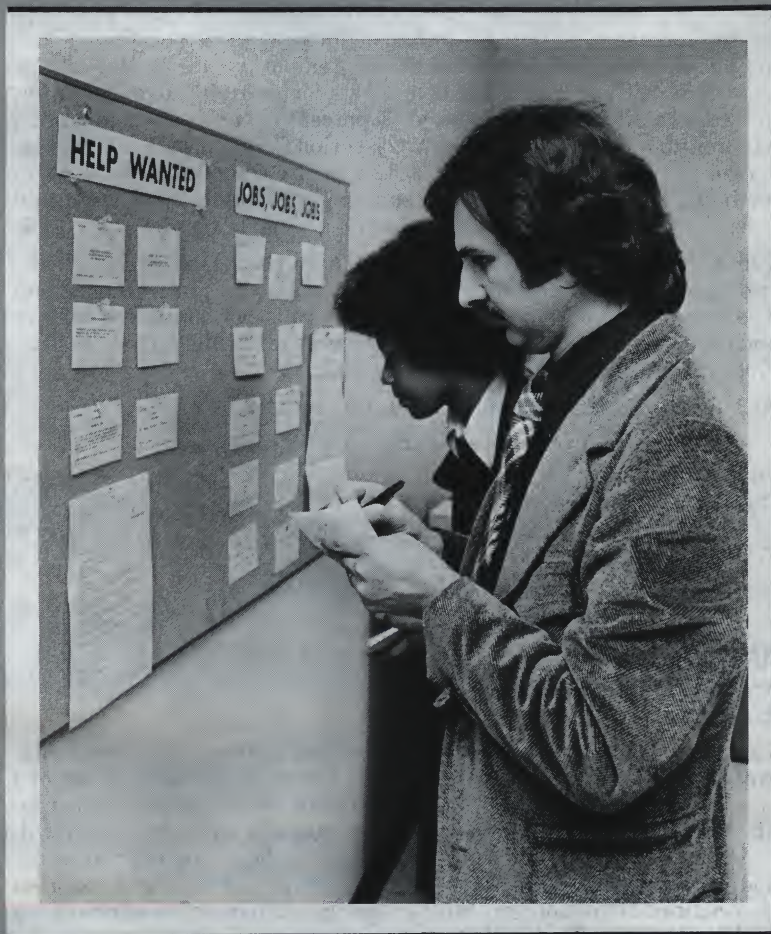
A version of this product is available for VAX computers.

Price: \$395 – \$9795

Contact: Cary Petterborg
(801) 487-4534

OLYMPUS SOFTWARE, INC.
1733 South 1100 East
Salt Lake City, UT 84105

Personnel



Charles Gatewood/Stock, Boston

APPGEN Payroll**PDP-11 Operating System:** XENIX™**Keywords:** • Employment • Payroll • Taxes

This system for calculating and printing payroll checks features complete payroll time entry, editing, and updating abilities for salaried, hourly, and contract personnel. The system maintains data-input accuracy by allowing transaction entry screens to be edited and corrected before posting. (Transaction entry screens match the formats of the original documents.)

The system allows different pay periods for salaried and hourly employees. Pay periods can range from daily to yearly.

Payroll includes virtually unlimited deductions/earning codes, including advance earned-income credit and temporary ad hoc deductions and earnings. The number of deductions for each employee is unlimited. Deductions can be computed by percent or fixed-dollar amounts, with not-to-exceed limits, for any pay-period frequency. Flexible table-driven tax calculations handle virtually any computation/deduction method. The system also includes summarized data for local, state, and federal government reporting, including quarterly reports and W-2s.

The system accommodates manually written checks, multiple G/L distributions for each employee, and job cost distributions. The system also provides payroll distribution, payroll history, employee history and review, and overtime sick-pay reports. Audit trails include posting programs that automatically produce journals.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$600

Contact: Sales Department
(713) 974-2298 or (800) 231-0062
SOFTWARE EXPRESS
2925 Briarpark Boulevard, 7th Floor
Houston, TX 77042

ARCHON: PAY**PDP-11 Operating System:** RSTS**Keywords:** • Education • Payroll

The ARCHON: PAY (payroll) and personnel system modules are integrated with a data management system to automate many phases of a payroll operation for educational institutions and other nonprofit organizations. The system supports on-line payroll entry and retrieval, employee payroll data records organized by department or location, and generation of special reports. Variable pay periods and assorted user-defined deductions are built-in features. An interface exists to the ARCHON: FRS (Financial Reporting System). The system produces, in addition to control reports, the checks and registers necessary for payroll records, prelists (transmittal sheets) for time card and salary,

and exception control. The system also features reporting facilities for management and personnel.

A version of this product is available for VAX computers.

Price: \$7650 – \$9700

Contact: Ila Sunshine
(203) 728-6777
QUODATA CORP.
266 Pearl Street
Hartford, CT 06103

ATT (Automated Time and Attendance)

PDP-11 Operating System: RSTS

Keywords: • Data collection • Payroll • Statistics

This system interfaces with an automated (electronic) time clock to track and record employee attendance, lateness, and absences. ATT is linked to a benefits accrual base so that absences or penalties for lateness are charged to the appropriate fringe benefit, such as vacation, sick, and so forth, or payroll system. ATT significantly reduces the time necessary to calculate and process employee hours worked each payroll period. The system generates a daily shift report and a weekly attendance report and accrues lateness monthly and annually. ATT operates as part of HDS/11 or independently.

A version of this product is available for VAX computers.

Price: \$5500

Contact: Robert Greenblatt
(914) 423-3623
ADL DATA SYSTEMS, INC.
50 Stratton Street South
Yonkers, NY 10701

C-11 Human Resource Management

PDP-11 Operating System: RSTS, RSX, RT-11

PRO Operating System: P/OS

Keywords: • Employment • Information management
• Query facilities • Report writer

This system converts human resource administration tasks into a cohesive, automated system by providing on-line access to detailed employee records; salary, benefit, and performance data; and a comprehensive skills inventory. The following features are supported: centralized human resource data in eight files, making it easy to access, update, sort, and print information; password protection for data security; inquiry capability for quick access to records and for insurance against data tampering; automatic updates of related files when information is entered into one file; a payroll interface for posting employee data, which includes a hold/release function to allow selection of data posted; a report writer interface to print customized reports, and parameter selection on reports.

A version of this product is available for VAX computers.

Price: \$1500 - \$3000

Contact: Denis Peterson
(516) 483-3123
CBM ASSOCIATES, INC.
955 Front Street
Uniondale, NY 11553

Employment Agency

PDP-11 Operating System: RSTS

Keywords: • Accounting • Employment • Project management
• Word processing

This package generates payroll and invoices and handles employee scheduling, accounts receivable, accounts payable, general ledger, checks and balances, client account activity, resume searching, project tracking, complete file maintenance, and word and list processing. The package can be departmentalized and provides management summary reports and labor distribution analysis.

A version of this product is available for VAX computers.

Price: \$2000 - \$20,000

Contact: Frank Zimmer, President
(201) 231-9400
UNITRONIX CORP.
50 County Line Road
Somerville, NJ 08876

HR&OD (Human Resource & Organization Development)

PDP-11 Operating System: Independent

Keywords: • Data base management • Decision support
• Financial planning • Modeling/simulation

This interactive staff organization and human resource data base manager gives senior management options for organization consolidation and changing or establishing new departments. Budget simulations can test the impact of new hires, advancements, and percentage pay increases/decreases or terminations. The system provides for goal setting and goal attainment by skills. Raters can fill in accomplishments on the screen. Statistics on ratings by skills and by raters can be maintained for periodic management review. Data can be retrieved by promotion fitness, bonus eligibility, and EEO compliance studies.

The organization and training aspect allows the user to establish skill needs for each department and assess the incumbent's qualifications. Training-need reports by cost centers or skills relate the assessments to attainments, future milestones with allied costs incurred to date, and expected future costs.

The staffing feature offers searches to fill upgrade vacancies, identify possible cross-training, spotlight persons working below capacity, and find persons in dead-end jobs who deserve special attention.

Compensation management can measure the percent of midpoint for each person by specified skill and pay ranges by department, comparable skills, or race/gender and comparable skills. Each report includes qualification data. Annual reviews are facilitated with record hard copies, specified by month, containing a person's compensation, performance, and qualification history.

Pay/benefits records are kept in a separate (interactive) file. Stored data for each employee is updated on an exception basis, with options for variable messages to employees before initiating the pay period. Check/stub data can be customized. Project accounting and general ledger data can be cross-updated to another mainframe.

One change updates related records or access prompts. The interactive records allow the user to retrieve administrative aids that contain names of persons due for records review, personal bonds renewal, or service recognition.

Software logic has been programmed and documented in compiled, multiuser BASIC. The 57 major programs are self-contained, using only a few operating system utilities. Other utilities, such as PROTECT, MOVE, LIST, and HELP, have been crafted into modules to ensure transportability between environments.

A version of this product is available for VAX computers.

Price: \$15,000 – \$225,000

Contact: O. H. Garceau

(801) 399-5332

H.R.D. SYSTEMS

319 Washington Boulevard

Ogden, UT 84404

MATCHUP: Assignment

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Employment • Modeling/simulation

• Pharmaceutical • Statistics

MATCHUP matches or assigns prospective job applicants' skills, years of experience, education, and so on to available jobs in a company, preferably a larger one. Matching is accomplished by using numerical ratings applied to attributes of the applicant. The output is a message of excellent, good, possible, or no match at all, accompanied by a numerical score corresponding to the total matches between all attributes of an employee's personnel profile and the requirements of the available position. Numerical weights can be attached to any of the applicant's characteristics, such as highest degree obtained, number of years of experience in commercial data processing or defense, minority-group member, war veteran, number of years of real-time software development, or speaks French or German.

The price is a 1-time license fee.

A version of this product is available for VAX computers.

Price: \$5000

Contact: Jon Prescott

(619) 247-7219

J & S ASSOCIATES

13407 Quapaw Road

Apple Valley, CA 92307

Payroll

PDP-11 Operating System: RSTS

Keywords: • Banking • Employment • Payroll • Taxes

The multiple-user Payroll system handles daily, weekly, biweekly, semimonthly, and monthly pay frequencies and exempt or nonexempt employees; 9 kinds of pay; any combination of tax-withholding profiles; 14 user-defined deduction codes; 4 types of accruals, as well as federal types of accruals; employee earnings records; complete month-to-date, quarter-to-date, and year-to-date history for each employee; multiple banks; and manually written or precalculated checks for a single employee.

The reporting features are a report writer facility, time sheet, payroll register, earnings report, tax summaries, W-2s, 941s, checks, and a deduction report.

A version of this product is available for VAX computers.

Price: \$3000 - \$6000

Contact: Linda Wingfield, Software Support Manager

(919) 766-0571

RESOURCE SYSTEMS CORP.

P.O. Box 1546

Clemmons, NC 27012

Payroll

PDP-11 Operating System: RSTS

Keywords: • Payroll

This program offers a complete payroll package.

A version of this product is available for VAX computers.

Price: \$3500

Contact: Frank Zimmer, President

(201) 231-9400

UNITRONIX CORP.

50 County Line Road

Somerville, NJ 08876

Payroll System

PDP-11 Operating System: CTS-300, RSX, RT-11

Keywords: • Payroll • Report writer • Service industries

• Taxes

This system provides operational efficiency and reliability with maximum system flexibility and responsiveness. The system requires minimum maintenance and program intervention but still provides the total payroll function — from check writing to form printing to report generating.

The system provides an employee master file; a restaurant payroll for tips and meals; hourly and salary payrolls, which can be run separately; weekly, biweekly, semimonthly, and monthly payrolls; the automatic calculation of gross pay, withholding, and deductions; entry of payroll attendance transactions; payroll attendance list printing; payroll and payroll check registers; computer-printed checks; an attendance distribution report; computer-printed 941-A and W-2 forms; departmental breakdown for labor analysis; multistate capability; and payroll tax deposit.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Bob Spowls

(904) 434-2685

DIGITAL SYSTEMS, A DIV. OF UCCEL

114 E. Gregory Street

Pensacola, FL 32501

Permanent Placement Personnel System

PDP-11 Operating System: RSTS

Keywords: • Employment • Information management
• Recruiting

This complete information management system for placement, search, and recruiting firms is designed for on-line single- or multiterminal interactive use with PDP-11s and can handle from 1 to 60 terminals. Originally developed in house for a professional employment firm, the software package has since been modified to satisfy office support (clerical) placement firms, search firms, and now corporate personnel departments.

The software features maintenance and retrieval of candidates, companies, and job openings. A user can record and update interview activity in all three files. Other features include variable information on candidates and companies, unlimited record sizes, management reporting, and phonetic search capabilities. Electronic mail, referral activity, and interface to word processing are optional modules.

The software incorporates the standard operational aspects and terminology of a placement agency or search firm. Users include both single-office and multilocation agencies. The system operates in a RSTS/E environment and is ideally suited for multiple terminals and remote location tie-ins. The system was written around a data base management system and uses many features of a VT100-series terminal, including split screens, reverse video, and alternate wide or narrow screens.

Price: \$13,000 – \$20,000

Contact: Murray Stinson or Cindi Coates
(713) 496-0771

SPARTIN SYSTEMS
14925-A Memorial Drive
Houston, TX 77079

Personnel Record System

PDP-11 Operating System: RSTS

Keywords: • List processing • Payroll

Memory required: 256KB and 20MB of disk storage.

This system, for companies using an outside payroll service, features a personnel record report (8½" × 11") showing such items as hire date, seniority, birthdate, vacations earned/taken/owed, and sick leave history. The system keeps track of the employees' dependents and workers' compensation code, prints mailing labels, and calculates the net pay for any payroll check to be prepared manually in advance of the normal payday.

Our software warranty provides users with comprehensive support and training. Each turnkey system purchased includes up to four hours of field training for each package, at no charge, during the first 30 days following installation. A user manual is provided with each software package.

The software, written in BASIC-PLUS, runs under RSTS/E on DIGITAL PDP-11 and compatible minicomputers. End-user, OEM, and software reseller licensing agreements are available.

Price: \$1495

Contact: Warren C. Nagler
(714) 997-8927

JADTEC, INC.
546 West Katella Avenue
Orange, CA 92667

Personnel Searcher

PDP-11 Operating System: RSTS

Keywords: • Employment

This package meets the needs of employment agencies, temporary placement agencies, and in-house personnel departments. Once the initial data base is established, data entry provides a large file of applicants and job orders. A flexible search function allows the comparison of both files in order to generate successful job matches. System features include a built-in interface with the NMI Complete Accounting Package and with most standard word processors.

Price: \$795

Contact: Angus Murphy
(215) 822-2407

NORTON-MURPHY INTERNATIONAL, INC.
 176 Chalfont Road
 Chalfont, PA 18914

P/R (Payroll), MCBA, Inc.

PDP-11 Operating System: CTS-300, Micro/RXS, RSTS, RT-11, XENIX™

Keywords: • Payroll

This payroll package serves hourly and salaried employees. The user can maintain the employee master file and can enter and edit payroll attendance transactions; general ledger account information by department; federal and state tax percents, limits, and withholding tax tables; and payroll adjustment transactions. The user can also perform check reconciliation, using the same files as A/P check reconciliation. Payroll, including gross wages, taxes, and deductions, can also be calculated. The Payroll package interfaces to two other MCBA packages; allows full printer spooling; supports seven terminal types, including the VT100 in both ANSI and VT52 modes; provides security; and supports multiple companies.

The Payroll package also prints the employee file printout; the alphabetical employee list; alphabetical employee mailing and time card labels; the payroll attendance edit list; payroll checks with choice of formats; payroll distribution summary; payroll check, savings bond, and union deduction registers; manual payroll transaction register; payroll to G/L distribution and payroll history reports; overtime, sick pay, job class/equal opportunity, state taxable wages, and city withholding tax reports; quarterly 941-A forms; and yearly W-2 and 1099 forms.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$2000 - \$3000

Contact: Sales Representative
 (818) 957-2900

MCBA, INC.
 2441 Honolulu Avenue
 Montrose, CA 91020

PRO-IV Payroll/Personnel Management

PDP-11 Operating System: Micro/RSTS, Micro/RXS, RSTS, RSX

PRO Operating System: P/OS

Keywords: • Accounting • Payroll

This system prepares and tracks payroll and recordkeeping for all types of employees in single- or multicompany environments and manages files for personnel management. Written in PRO-IV, a powerful and easy-to-use fourth-generation language, this application tracks regular, overtime, vacation, holidays, sick leave, and miscellaneous

1176 Personnel

compensation; provides detailed information on the check stub; provides payroll for hourly, salaried, and commissioned employees on a daily, weekly, biweekly, semimonthly, monthly, quarterly, or annual basis; and provides exception reports.

A version of this product is available for VAX computers.

Price: \$700 – \$15,000

Contact: Craig Thompson
(714) 951-8171

APPLICATIONS SYSTEMS CORP.

23181 Verdugo Drive, Suite 101

Laguna Hills, CA 92653

TBS Time Accounting for Professionals

PDP-11 Operating System: Micro/RSTS, Micro/RXS, RSTS, RXS,
RT-11, TSX-PLUS™

Keywords: • Billing

The TBS Time Accounting System, designed for a wide variety of professional-service organizations, has great flexibility in the type and manner of transaction entry. A large number of management-level reports are available for analysis of productivity and revenue sources. An interface to the TBS General Ledger system is optional.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$995 – \$2500

Contact: Larry Jones

(818) 352-6058

THETA BUSINESS SYSTEMS

9947 Commerce Avenue

Tujunga, CA 91042

Temporary Services Personnel System

PDP-11 Operating System: RSTS

Keywords: • Accounting • Information management • Payroll
• Service industries

This complete information management system for temporary service firms is designed for on-line single- or multiterminal interactive use with PDP-11s and can handle from 1 to 60 terminals. Including payroll, billing, and accounts receivable, the package offers total employee management through the search, dispatching, and sales-reporting features. Reporting covers employee availability, work order status, sales history, aging balances, and special requests.

Searches can be done by skills, locations, availability, status, name (phonetic match), and other criteria. Optional modules include electronic mail and interface to word processing and accounting. Diverse jobs such as timesheet entry, payroll, and dispatching may be performed simultaneously, as the software operates in a RSTS/E time-sharing environment.

In summary, the package provides the temporary service firm with an information storage and retrieval system, an accounting and payroll system, a management information and control system, and an administrative system — all in one.

Clients range from single-terminal 1-office temporary services that are independents to national chains of temporary services.

Price: \$16,000 – \$25,000

Contact: Cindi Coates or Murray Stinson
(713) 496-0771

SPARTIN SYSTEMS
14925-A Memorial Drive
Houston, TX 77079

TIMANA-IMPRS Time-Analysis System

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Accounting • Billing • File management

TIMANA-IMPRS handles manpower reporting and invoicing, client analysis reports, and journals. The system provides a complete record of all employee hours, automatically calculates for chargeable hours, allows separate rates for each employee for different customers, has menu-driven file maintenance, performs extensive on-line editing, does not allow duplicates to be entered, allows instant access to employee records, allows separate rates for each employee for special jobs, provides automatic master file backups, allows for constant monthly charges to be established, prints client invoices and labels, handles manual invoices, has proof reporting available, and allows all master files to be interactively reported.

A version of this product is available for VAX computers.

Price: \$3000

Contact: Elvin E. Smith or Forrest E. Weddle
(913) 782-8544

RUF CORP.
1533 E. Spruce
Olathe, KS 66061

TIMETRACK: Project Time Accounting

PDP-11 Operating System: RT-11

Keywords: • Accounting • Billing • Cost accounting
• Project management

TIMETRACK allows you to enter job number and time-in/time-out records from employee time reports, which are saved in a condensed-format file that can be retrieved, easily updated, and used to generate reports and summaries. The software supports several flexible time entry formats and performs error checking of each entry and content checking. Any record entry errors are flagged and described for easy correction.

TIMETRACK provides 19 control commands that can be abbreviated to 2-letter keystrokes. Specially defined function keys for VT100 and VT52 consoles are used to speed data entry. A help menu is available at any stage of program operation.

The package is supplied as a save image program with a separate data file for employee names and related data and a table of valid job numbers. Date ranges can restrict the use of any data. A table update and maintenance program, an extensive on-line help file, demo files, and a manual with sample forms are provided.

Price: \$775

Contact: Paul F. Fitts
(914) 373-9003

INNOVATEK MICROSYSTEMS INC.
Smithfield Road, R1 Box 104
Millerton, NY 12546

Public Utilities



Accounts Receivable Status

PDP-11 Operating System: RSTS

Keywords: • Accounts receivable • Billing

Accounts Receivable Status gives the telephone company a complete on-line file of billing-related information for each customer. The system also allows on-line data entry of new-account setups, payments, and completed service order information. The system allows printing of reminder notices on demand, using the company's own criteria for which customers should receive reminders.

Information filed by the system includes billing name and address, member number, service and equipment, recurring charges, directory listings, credit information, deposit and interest, current month, toll transactions, amount due, last payment date, and 30, 60, and 90 days past-due amounts. All service order-related information for new connects, reconnects, and disconnects is entered as history or is transferred from the Service Order System.

Used with Allied's batch TRA/TOL, Accounts Receivable Status allows the smaller computer system to run on-line data without prohibitive expense. Optional reports from the subscriber master file include mailing labels, name and address, and customer credit card files for the printing of credit cards.

Price: Available upon request

Contact: Paul Jorgensen

(206) 456-3535

ALLIED DATA

P.O. Box 2406

Olympia, WA 98507

BARCS

PDP-11 Operating System: RSTS

Keywords: • Accounts receivable • Billing • General ledger
• Report writer

This system bills and prepares reports for management, as well as operational and regulatory purposes, including cost of service studies. Billing, in six cycles spaced throughout the month, serves approximately 35,000 customers: 15,700 metered customers and 19,300 flat-rate customers. Although residential metered customers are billed monthly, the bills are based on meter readings obtained every other month. Industrial and commercial customers' bills are based on a monthly meter reading. The program can be easily modified for a quarterly billing cycle.

Customer inquiries can be handled quickly and easily. The operator inputs the customer's account number, name, or service address. If the exact name or address is unknown, an approximation permits the operator to scroll through the files to find the correct customer.

Accounts payable, payroll, and general ledger systems have been developed, taking into consideration the unique aspects of a regulated water utility. The accounts payable, payroll, and billing programs are interfaced with the general ledger, eliminating possible errors.

A version of this product is available for VAX computers.

Price: \$6995 - \$25,000

Contact: Hank Somerall

(717) 569-5733

EASTERN SYSTEMS MANAGEMENT, INC.

1585 Commerce Drive

Lancaster, PA 17601

BMOSS (Building Maintenance Operation Service System)

PDP-11 Operating System: RSX

Keywords: • Facilities management • Property maintenance
• Scheduling

This highly interactive system, written in BASE/PL, manages the building maintenance functions of telephone companies in a control center environment. The system schedules mechanics' workloads with preventive maintenance and trouble call jobs; tracks mechanics' hours, both productive and exception; and handles individual purchase and contract billing.

A cost-tracking subsystem interfaces with the accounting department, which makes payments to vendors, and supports a reports function for producing several useful expense, performance, and vendor information reports. Other subsystems include an electronic office, basic system control functions, and a data base maintenance feature for maintaining master data files.

Field managers can access a simplified version of BMOSS enabling them to approve jobs and receipt of materials and other tasks that do not need to go through the control center. The field system also provides outstanding-work and force-utilization reports, as well as a simplified query language for specific reporting.

Price: Available upon request

Contact: Peter L. Wise

(303) 892-5626

INFORMATION STRUCTURES, INC.

910 15th Street, Suite 844

Denver, CO 80202

COMIT (Communications Management Information Tool)

PDP-11 Operating System: RSTS, RSX, RT-11, ULTRIX-11

Keywords: • Data collection • Telecommunications

This cost allocation/network and traffic analysis package for telephone systems provides call detail by extension, cost center, department, and company, using the latest AT&T rates. COMIT has extensive network management and traffic statistics capabilities, which include usage

reports by area code and exchange, comparison of existing WATS, FX, and DDD to other common carriers — MCI, SPRINT, SBS, and others — to determine the least-cost facilities for placing the calls, and a breakdown of traffic by hour/day/month. COMIT also includes exception reports, such as high-cost/long-durations calls, high-volume call reports to selective numbers, and searches on specific numbers, as well as a complete directory service. COMIT can store up to 800,000 call records, depending on the configuration, and can produce complete billing statements as an option. The stand-alone COMIT will work with any telephone system and can also be used under a full service bureau arrangement.

A version of this product is available for VAX computers.

Price: \$10,000 – \$40,000

Contact: Steve Anderson
(616) 949-9360

PROFESSIONAL COMPUTING RESOURCES, INC.
1009 Parchment S.E.
Grand Rapids, MI 49506

Customer Service Inquiry System

PDP-11 Operating System: RSTS

Keywords: • Information management

This system provides fast, easy access to service, equipment, and line assignment information and works with the Accounts Receivable Status system to maintain plant information (versus billing information) for each customer. Initial inquiry can be done by telephone number, service name, service address, equipment assignment number, cable (and optionally pair), added main line (AML) number, and Carrier System (CXR) number and channels.

Six inquiry screens available pertain to service and plant-related information within Customer Service Inquiry. History information from other related systems (Trouble Ticket, Service Order) is available in summary and detail when those systems are used.

Price: Available upon request

Contact: Paul Jorgensen
(206) 456-3535

ALLIED DATA
P.O. Box 2406
Olympia, WA 98507

Electrical Contracting

PDP-11 Operating System: RSTS

Keywords: • Accounting • Electrical
• Information management • Service industries

Electrical Contracting provides payroll — certified and joint industry board reports — accounts receivable, accounts payable, a purchase ordering system, a job costing and control system, billing, general

ledger, inventory control and analysis, sales analysis, and word and list processing.

A version of this product is available for VAX computers.

Price: \$2000 - \$20,000

Contact: Frank Zimmer, President
(201) 231-9400

UNITRONIX CORP.

50 County Line Road
Somerville, NJ 08876

Electrical Repair and Paging

PDP-11 Operating System: RSTS

Keywords: • Accounting • Electrical
• Information management • Service industries

This program provides accounts receivable, a data base of customers, personnel, contract billing, inventory sales and analysis, job scheduling, billing, job ticket repairs analysis, job installations control, quotation handling, department cost and analysis, sales analysis, job costing, word and list processing, accounts payable, general ledger, and payroll.

A version of this product is available for VAX computers.

Price: \$2000 - \$20,000

Contact: Frank Zimmer, President
(201) 231-9400

UNITRONIX CORP.

50 County Line Road
Somerville, NJ 08876

EUBA (Electrical Utility Billing and Accounting)

PDP-11 Operating System: CTS-300

Keywords: • Accounting • Billing • Electrical • Payroll

EUBA is a complete, interactive system designed for electric utility companies. The system includes a comprehensive billing system that encompasses all aspects of producing bills, making adjustments, keeping statistics and history, reporting, and transformer loading. The system also includes general ledger, financial statements, payroll, accounts payable, inventory, a P.O. system, estimating, work order processing, and costing.

The software conforms to AMEU accounting practices and regulations.

A version of this product is available for VAX computers.

Price: \$16,000 - \$25,000

Contact: Nigel Harris, President
(613) 829-8888

HARRIS COMPUTER SYSTEMS

16 Credit Union Way
Nepean, Ontario K2H 8R6 Canada

FMS (Fleet Management System)

PDP-11 Operating System: RSX

Keywords: • Automotive • Billing • Scheduling

This highly interactive system, written in BASE/PL, manages the automotive operations of telephone companies in a control center environment. The system schedules mechanics' workloads with preventive maintenance and trouble call jobs; tracks mechanics' hours, both productive and exception; and handles individual purchase and contract billing.

A cost-tracking subsystem interfaces with the accounting department to update master general ledger files and generate vendor payments.

Other subsystems include fuel and parts inventory maintenance, an electronic office, a basic system control function, and a data base maintenance function for maintaining master data files.

A reporting feature for the subsystems provides force performance, outstanding work, outstanding bills, fuel disbursements, reorder, parts purchases, labor, and repair reports.

Price: Available upon request

Contact: Peter L. Wise

(303) 892-5626

INFORMATION STRUCTURES, INC.

910 15th Street, Suite 844

Denver, CO 80202

General Ledger System

PDP-11 Operating System: RSTS

Keywords: • General ledger

This system provides financial statements in a variety of formats for telecommunications and telephone companies. Accounts are established with an account number, account name, and financial statement code that controls the format for profit and loss and balance sheet reports. Budget amounts and prior-year comparisons can be entered. The system can also produce supporting schedules and a source cross-reference.

The General Ledger System can optionally interface with the Payroll, Vehicle Ledger, Accounts Payable, and Work Order systems.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Paul Jorgensen

(206) 456-3535

ALLIED DATA

P.O. Box 2406

Olympia, WA 98507

MOSTE (Management of System Telephone Expenses)**PDP-11 Operating System:** RSTS**Keywords:** • Accounting • Billing • Networking
• Telecommunications

This system gives users complete control over their telephone systems' expenses. Controllors and accountants can use the accurate, verifiable reports to allocate telephone expenses back to individuals, departments, or cost centers and divisions. Communications people are given all the necessary tools to configure their telephone systems' PBX, outside lines, and data communications network. The modular design of the system allows the collection of data from any PBX and accommodates users with 100 to 12,000 telephone extensions.

The system also features telephone directory reports and an optional Reseller's module for clients who want to bill their telephone system users. All necessary accounting functions are accommodated, including interfacing to a general ledger system. MOSTE's flexibility allows the configuration for multiple telephone systems.

Thorough on-site training is provided, as well as free periodic seminars at our office. Quarterly updates to the MOSTE system's pricing data bases keep clients up to date with the latest AT&T, common carrier (such as MCI and SPRINT), and Bell operating company (such as NYNEX and PACTEL) telephone rates. Custom programming for special situations is provided.

A version of this product is available for VAX computers.

Price: \$21,000 – \$35,000**Contact:** Mike Baer

(617) 875-7300

COMMUNICATIONS ANALYSIS CORP.

100 Fountain Street

Framingham, MA 01701

Payroll System**PDP-11 Operating System:** RSTS**Keywords:** • Payroll

This system for telecommunications and telephone companies is designed to automate the payroll process. The system establishes an employee master file, including name, address, hourly or pay-period salary rates, as well as other pertinent information and can also be used to establish accounts based on general ledger codes to expense salaries.

Time sheet data and hours worked can be entered daily, weekly, or monthly. When time sheets are entered, the employee number and expense codes are validated against the master file to ensure accuracy.

The system automatically calculates salary, taxes, FICA, deductions, and sick and vacation pay; updates employee year-to-date totals; and produces payroll checks and payroll reports. The system produces

quarterly 941/5208 reports showing quarter-to-date hours and amounts for FICA, federal withholding tax, and State Disability Insurance Liability. At the end of the year, W-2 forms can be printed.

The Payroll System can also be interfaced with the Vehicle Ledger, Work Order, and General Ledger systems.

Price: Available upon request

Contact: Paul Jorgensen
(206) 456-3535

ALLIED DATA
P.O. Box 2406
Olympia, WA 98507

RCC Billing/Inventory System

PDP-11 Operating System: CTS-300, RT-11, TSX-PLUS™

Keywords: • Billing • Inventory • Telecommunications

Memory required: 256K.

This telemanagement system for the Radio Common Carrier (RCC) industry supports the unique character of RCC billing, receivables, and inventory control. RCC applications require that accounts receivable, billing, and inventory control functions be linked so that each manipulation of equipment (pagers or mobile telephones) triggers an update to the billing files, along with a simultaneous change in inventory status.

These systems capture all types of subscriber-generated activity, such as call counts, for automatic conversion to accurate, billable data. To ensure positive control of inventories and timely, accurate billing, CSI has engineered interfaces that link its system to paging terminals and mobile switches.

Simplicity of operation is a major benefit of CSI's designed-in link to RCC equipment. For example, a pager can be programmed into service using two simple screen displays: the Pager Record, which holds standard information about each pager in inventory; and the Customer Record. A third, automatic display shows the activation of the pager in the paging terminal. If desired, the system will generate a test page.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$12,500 - \$90,000

Contact: John M. Cohen
(404) 448-5259

COMMUNICATIONS SOFTWARE, INC.
2388 Pleasantdale Road
Atlanta, GA 30340

REA Accounting Software**PDP-11 Operating System:** CTS-300, RT-11**PRO Operating System:** RT-11**Keywords:** • Accounting • Billing • General ledger

This package of programs, written in DIBOL, does billing, general ledger, and capital credits for rural electric cooperatives. For cooperatives with fewer than 1500 consumers, this program can be run with a single terminal and 64K memory. For larger cooperatives, 256K to 512K of memory and multiple terminals are recommended.

Price: \$2000 - \$15,000**Contact:** Ralph Dreyer

(406) 656-8100

SCHMIT, SMITH & RUSH

1925 Central Avenue, P.O. Box 20876

Billings, MT 59104

REACT**PDP-11 Operating System:** RSTS**Keywords:** • Accounting • Credit • Electrical
• Information management

REACT is a complete data processing system for electric utility companies. The system includes a complete consumer billing system (approximately 500 programs), payroll, general ledger, accounts payable, materials and supplies, and a complete work order system, including maintenance of continuing property records. For rural electric co-ops, the system also includes a complete capital credit system. This software fully conforms to all REA and DOE accounting standards, as well as to known PURPA regulations.

In addition, the system offers as options a full selection of management information applications, including financial forecasting, vehicle analysis, bad debt, service order management, and a full distribution engineering system that includes transformer load management, voltage-drop calculations, short-circuit analysis, TVA reporting, outage reporting, transportation, utilicorder, and service order management.

A version of this product is available for VAX computers.

Price: \$35,000 - \$250,000**Contact:** S. G. Price

(803) 799-4094

UMS/DIGITAL SYSTEMS, INC.

P.O. Box 12

Columbia, SC 29202

Telephone Accounting and Billing System**PDP-11 Operating System:** RT-11**Keywords:** • Accounts receivable • Billing • Report writer
• Telecommunications

This complete, menu-driven billing system provides customer analysis and produces a variety of reports. Individualized 5-digit access codes are provided for each user, permitting departments or companies to review calls made by employees. The system can also produce real-time billing for hospitals and hotels. Record keeping for each area — code exchange and 1 or region — includes number of calls, total time used, and total cost of time used (both monthly and yearly). The system can automatically generate special changes the client desires. Region totals, a rates-breakdown report, customer detail, and other reports can be generated.

Price: \$3000 — \$8000

Contact: Chuck Trapp, Director of Marketing
(701) 235-7799

PROFESSIONAL DATA PROCESSING, INC.
P.O. Box 8160
Fargo, ND 58102

TelEquip

PDP-11 Operating System: ULTRIX-11

Keywords: • Data base management • Information management
• Inventory • Telecommunications

This information management system for the daily management of medium to large telecommunications systems (PBX and Centrex) provides for the complete tracking of telephone equipment inventories, telephone peripherals, facilities, and special circuits. Features of the software include inventory of equipment and PBX extensions, trunking, key systems, special circuits (WATS, private lines, 800 numbers); cable and cross-connect information; trouble reporting log and tracking; service order issuance and tracking; personnel directory and locator information; electronic PBX features; and fields for maintaining cost information on monthly and 1-time equipment and labor charges. Numerous reports are available as output for this information.

A version of this product is available for VAX computers.

Price: \$25,000 — \$30,000

Contact: Bill Grosso or Dave Mann
(505) 296-3301

ADVANCED SOFTEL CONCEPTS INC.
1033 Lawrence N.E.
Albuquerque, NM 87123

Trouble Ticket Reporting System

PDP-11 Operating System: RSTS

Keywords: • Information management • Property maintenance

This system controls and monitors troubles from the time they are reported, as they are tested and dispatched, until they are cleared. The system maintains statistics and provides reports for completed repairs. Each company can determine how many months of information to

retain in history for reporting purposes, using its own acronyms, codes, and customer setup. Most criteria and display fields are user defined. The trouble report can be printed at any location determined by the operator during dispatching. Statistics, including indexes, percentages, and elapsed time to clear, are updated monthly.

Uncleared trouble reports in the system can be accessed through an inquiry function for monitoring status. Access to information can be through any field on the trouble ticket, including equipment assignment, dispatch information, status, and the trouble, found, and cause descriptions for the trouble.

Reports can be set up to run on request or automatically with changes to standard reports or new reports developed easily on line.

Each customer or premise trouble history is kept in summary and in detail in both this system and Customer Service Inquiry.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Paul Jorgensen
(206) 456-3535

ALLIED DATA

P.O. Box 2406

Olympia, WA 98507

UTIANA-IMPRS Utility Analysis System

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Data base management • Data collection
• Facilities management • Query facilities

This system records up to three years of monthly power, gas, water, and telephone information; summarizes total information by building number and meter number; provides complete on-line inquiring/processing; allows for easy interactive reporting of all files; is completely menu driven; uses security passwords to control access; provides automatic master file backups; and performs extensive on-line editing and balancing.

A version of this product is available for VAX computers.

Price: \$2500

Contact: Elvin E. Smith or Forrest E. Weddle
(913) 782-8544

RUF CORP.

1533 E. Spruce

Olathe, KS 66061

Utility-11

PDP-11 Operating System: CTS-300, RSTS, RT-11

PRO Operating System: RT-11

Keywords: • Billing • Information management
• Report writer

This comprehensive billing and reporting package provides on-line inquiry into customer information and flexibility in maintaining utility customer information; water, electrical, and sewer/sanitation rates; and meter readings. The package provides an interactive method of posting customer water, sewer, sanitation, and electric charges and payments; obtaining historical reports and aging information; and creating customer statements. All posting of utility (meter) reading is done on an interactive form. Cash receipts can be applied in a balance-forward or an open-item basis. Unapplied credits can be posted to customer accounts, or the correct invoice can be matched and paid. Virtually any statement and past-due notice format can be designed by the user with parameter files. Recurring customer account activity is available at user request for any date range. Aging analysis is also available for any date range, with aging as a whole or on a departmental basis. Sales tax reporting is also provided by the system. Reports about the consumption of water and electricity are available on request. The program can operate in either a single-user (in-house) or multiuser (time-share) environment. The system interfaces with the MGL-11 system for direct posting of A/R entries to the general ledger system.

A version of this product is available for VAX computers.

Price: \$2000 - \$13,000

Contact: Ronald R. Kirchhoff

(806) 293-4286

KMK ENTERPRISES, INC.

701 Broadway, Suite 204

Plainview, TX 79072-7353

Vehicle Ledger System

PDP-11 Operating System: RSTS

Keywords: • Automotive • Cost accounting

This system for telephone and telecommunications companies provides an automated vehicle and information report that traces operating expenses for company vehicles and that maintains a master file with hourly rates on each vehicle. Vehicles, expenses, and operators are individually identified. The monthly Vehicle Ledger report reflects total hours and costs and provides detailed information in the form of corresponding hourly dollar values for each period of operation. The report further cross-references general ledger and work order numbers.

Price: Available upon request

Contact: Paul Jorgensen

(206) 456-3535

ALLIED DATA

P.O. Box 2406

Olympia, WA 98507

Work Order System**PDP-11 Operating System:** RSTS**Keywords:** • Cost accounting • Project management

This system for telecommunications and telephone companies tracks all costs associated with a project. Overhead control records are established, determining overhead, percentages, range(s) of general ledger accounts, and the clearing account that is to be credited when the work order is closed.

The system segregates charges by inside labor and material, outside labor and material, and overhead. A work order analysis is available that shows current month and project-to-date charges for each work order, segregated by type. The system also allows inquiry on the status of work orders.

Optional interfaces include the Payroll, Accounts Payable, Vehicle Ledger, and General Ledger systems.

Price: Available upon request**Contact:** Paul Jorgensen
(206) 456-3535

ALLIED DATA

P.O. Box 2406

Olympia, WA 98507

Wheat-Oats System

Wheat-Oats System
The wheat-oats system is a common one in the West. It is a system of growing wheat and oats in rotation. The wheat is grown in the fall and the oats in the spring. The wheat is harvested in the fall and the oats in the spring. The wheat is sold for grain and the oats for hay. The wheat-oats system is a very profitable one and is well adapted to the West.

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Real Estate



Robert Pyle

AESOP (Aggregate Exception System for Mortgage Portfolios)

PDP-11 Operating System: RSTS

Keywords: • Banking • Financial analysis
• Property management

AESOP serves the master servicer or trustee of a portfolio of single-family mortgages. The system reports to the investor or the source of mortgage funds by reconciling the direct servicer's reports and remittances. The system is designed for both commercial application and public housing agencies.

On a monthly basis, the only input to the system consists of exceptions to the normal monthly payment, such as liquidations, curtailments, prepayments, delinquencies, or principal adjustments. If the mortgagor makes the normal scheduled payment, no input is required. User-friendly screens and prompts guide the user in operating the system.

Since reconciling and balancing are done before individual mortgage records are posted, discrepancies are resolved before files are updated. The system produces monthly reconciliation reports and forecasts for the next month, based on the activities of the month just closed. A mortgage trial balance is generated, as is a forecast trial balance.

The user decides on the elements to be stored for each mortgage. An integral report writer enables the user to retrieve any stored data and to format ad hoc reports.

A version of this product is available for VAX computers.

Price: \$35,000

Contact: Ralph S. Trigg, Jr.
(505) 842-1247

AUTOMATED OFFICE SYSTEMS, INC.
P.O. Box 100
Albuquerque, NM 87103

Apartment Management System

PDP-11 Operating System: RSTS

Keywords: • Property management

This system provides full and accurate management of apartment complexes. Property, tenant, and apartment data can be entered, updated, and listed. The program posts accounts receivable and payment and facilitates the distribution of delinquency letters.

Price: \$3000 - \$5000

Contact: Robert Davidson
(215) 836-1406

TIMESHARING CONSULTANTS OF PENNSYLVANIA,
INC.
6107 West Mill Road
Flourtown, PA 19031

C-11 Fixed Assets**PDP-11 Operating System:** Independent, RSX, RT-11**Keywords:** • Accounting • Fixed assets • Report writer

The system tracks acquisition, use, improvements, and adjustments to and disposal of long-lived assets. It also provides amortization schedules, ACRS, ADR, FASB-13, Section 1250, ITC elections, Section 179 expense deductions, and a report writer that provides customized management reports. The package interfaces with the general ledger in the property management system.

A version of this product is available for VAX computers.

Price: \$1500 - \$3000**Contact:** Denis Peterson

(516) 483-3123

CBM ASSOCIATES, INC.

955 Front Street

Uniondale, NY 11553

C-11 Property Manager Tracking System**PDP-11 Operating System:** Independent, RSX, RT-11,
TSX-PLUS™**Keywords:** • General ledger • Property management
• Report writer

This package provides a property, tenant, and rental-unit cost control and payment-tracking system. Vacancies, rent delinquency, expirations and escalations, deposits, payments, and expenses are all integrated through receivables and payables into a general ledger. A report writer feature provides customized financial statements and management reports.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$1500 - \$8500**Contact:** Denis Peterson

(516) 483-3923

CBM ASSOCIATES, INC.

955 Front Street

Uniondale, NY 11553

Commercial Property Management**PDP-11 Operating System:** CTS-300, RSTS, RT-11**Keywords:** • Accounting • Accounts receivable • Billing
• Property management

This system provides instant recall of current and historical data for video display or printing and gives the commercial property manager complete and effective financial control. Lease, rent, tax refund, accounts receivable, and sales reports are available and can be displayed or printed for faster, paper-free review. An interrelationship of

data files storing information on properties, tenants, leases, billings, and sales forms the core of this application. The master control record permits a user to tailor this system to take advantage of specific features. General ledger interface, percent rent calculation, invoice history, tax calculation, tax escalation, and common area calculations can be disabled if they are not required. The Commercial Property Management system features property information, tenant and lease information, lease abstract details, invoicing, accrued charges, tax escalation, common-area distribution, adjustments, and deposits and prepaid rent.

A version of this product is available for VAX computers.

Price: \$3000 - \$15,000

Contact: Tom Muskiluke
(519) 893-4200

DIGITAL BUSINESS COMPUTERS
133 Manitou Drive
Kitchener, Ontario N2C 1L4 Canada

Commercial/Residential Property Management

PDP-11 Operating System: CTS-300, Micro/RSX, RSX, RT-11

Keywords: • Billing • Decision support
• Property management

This software provides complete management and accounting control for both commercial and residential properties. This interactive system satisfies the managers' requirements for timely reporting on vacancies, expirations, and other information needed for day-to-day operations. Basic requirements, such as billing, accounts receivable, lease renewals, C.P.I. increases, percentage rent, and detailed tenant history, are quickly and easily handled by the system. This system can also be expanded to provide a complete information management system adapted to the unique needs of the customer.

A version of this product is available for VAX computers.

Price: \$7500 - \$25,000

Contact: John Howarth
(201) 277-6100

SYMBOLIC SYSTEMS INC.
25 Chatham Road
Summit, NJ 07901

Housing Authority — Section 8

PDP-11 Operating System: RSTS

Keywords: • Accounting • Financial management
• Government • Property management

The interactive Section 8 system replaces a tedious, error-prone manual undertaking with a simple, reliable system for automating a HUD Section 8 Rent Subsidy Program. The Section 8 system maintains tenant, landlord, and statistical information necessary to meet and exceed

the federal government reporting standards placed on a housing authority agency. Screen-formatted data entry encourages user acceptance, decreases user training time, and increases data integrity.

In addition to automating the clerical and reporting functions of a housing authority with a Section 8 program, the Section 8 system offers a consistency in accounting and in reporting in an otherwise volatile atmosphere.

A version of this product is available for VAX computers.

Price: \$6000 – \$16,000

Contact: Nathan I. Lieberman
(812) 479-6951

EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue
Evansville, IN 47714-2994

Housing Authority Tenant Accounting

PDP-11 Operating System: RSTS

Keywords: • Billing • Government • Property management
• Statistics

This interactive system automates the record keeping and reporting and drastically reduces the amount of manual work normally associated with public housing authority offices. The record-keeping problems of public housing authorities are typically massive amounts of paperwork, the need for enormous amounts of tenant and statistical information and accounting control, HUD reporting requirements, and information necessary to fulfill requests of other federal, state, and local agencies. The Tenant Accounting system automates those clerical and reporting functions while providing a continuity of accounting and information.

A version of this product is available for VAX computers.

Price: \$8000 – \$23,000

Contact: Nathan I. Lieberman
(812) 479-6951

EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue
Evansville, IN 47714-2994

ILSA (Installment Loan Service Accounting)

PDP-11 Operating System: RSTS, RSX

Keywords: • Banking • Financial management

This easy-to-use system services installment-collection accounts pertaining to notes and trust deeds and land sales contracts. The program is designed for installment collection, collections departments in financial institutions, escrow and title companies, mortgage companies, and large real estate firms and developers.

ILSA features on-line display of account status information, payment history, and disbursement records; amortization of payments with monthly, quarterly, semiannual, and annual payment schedules; disbursements to payees, containing complete payment amortization records; and an impound account capability and the handling of underlying obligations.

ILSA produces daily accounting reports, payment coupons, year-end statements, beneficiary and demand statements, late-notice letters, and other supplemental reports. Expansion is limited only by the hardware configuration. The software imposes no limitations on the maximum number of account records, payees for an account, or retention of historical records.

A version of this product is available for VAX computers.

Price: \$5000 - \$28,000

Contact: Richard Brunet

(702) 786-2911

DATA CONCEPTS INTERNATIONAL, INC.

P.O. Box 20502

Reno, NV 89515

Mortgage Loan Closing Software

PDP-11 Operating System: RSTS

Keywords: • Banking

This software processes, tracks, and prepares closing documents, including checks and drafts, for real estate loan-closing institutions.

Price: \$5500 - \$80,000

Contact: Stephen T. Thompson

(714) 492-0993

MORTGAGE SYSTEMS AND SERVICE, INC.

1400 North Burton Place

Anaheim, CA 92806

PMS (Property Management System)

PDP-11 Operating System: BOS/5

Keywords: • Accounts receivable • Financial analysis
• General ledger • Property management

Designed for the professional property manager who may be administering apartment buildings, condominiums, office premises, single-family units, or any combination of rental or managed properties, PMS covers all areas concerning the record keeping and control of properties and their tenants. A complete accounting system keeps detailed records of payments, receipts, and amounts due and also generates comprehensive financial information for owners and investors, including budgeting and forecasting data.

Compatible software packages in word processing, spreadsheets, and listings are also available to create a comprehensive system for the property manager.

Price: \$2400 - \$3850

Contact: Joanne S. Jensen
(415) 367-6264

PORTABLE SOFTWARE INC.
650 Bair Island Road, Suite 204
Redwood City, CA 94063

Property Management (Rental)

PDP-11 Operating System: CTS-300, RT-11

Keywords: • Accounting • Financial analysis
• Property management • Scheduling

This system allows the property manager to control and report on the financial aspect of the buildings managed, to keep a full record of all units within buildings within projects, and to generate financial statements for individual buildings or projects, as well as for the consolidated operation. New buildings can easily be added to the system.

The system handles the automatic chargeup of monthly charges, which can include rent, condominium fees, parking, cable charges, and so on for all occupied units. The system keeps track of lease-renewal dates for the generation of renewal letters and will automatically apply percentage increases as permitted by law for lease renewal. Delinquency letters are generated, based on severity of delinquency. Vacancy lists can be printed on request, and unit expiry lists can be printed for any specified date. Full tenant information and history are maintained for all active tenants. Up to three previous tenants and one future tenant can be associated with any unit, permitting collection of debts from previous tenants to be handled easily.

The integrated accounts payable system allows cash disbursements to be distributed appropriately to one or more of the buildings or projects as determined by the property manager. An automatic check-generation facility is also available. A full set of financial statements is provided, including Detailed and Summary Trial Balances, Income Statement, and Balance Sheet.

A version of this product is available for VAX computers.

Price: \$3000 - \$10,000

Contact: Nigel Harris
(613) 829-8888

HARRIS COMPUTER SYSTEMS
16 Credit Union Way
Nepean, Ontario K2H 8R6 Canada

Property Management System

PDP-11 Operating System: RSX

Keywords: • List processing • Property management

This computer service for recording and retrieving monthly rents and fees is fast, easy to operate, time saving, and economical. The system enables one person to enter up to 1000 checks a day, prints out cash

receipts for the day or month, prints out delinquencies for any date, automatically adds on late charges, automatically records security deposit interest when earned, provides lease termination to any date in the future, shows present and upcoming vacancies, prints out mailing list labels, provides permanent information sheets on all tenants, and provides a permanent receipt record for each tenant.

You can operate from any location that has access to a telephone. This system records and deposits checks on the same day, providing immediate cash flow; spots incorrect entries on the same day, before deposits are made; receives daily reports, if required; and chooses from four methods of using this service.

Price: \$10,000 - \$15,000

Contact: John H. Lynch
(203) 332-1960

MANAGEMENT SERVICES CO.

2710 North Avenue, Suite 102

Bridgeport, CT 06604

Real Estate Information System

PDP-11 Operating System: Micro/RSX, RSTS, RSX, RT-11,
ULTRIX-11

PRO Operating System: P/OS

Keywords: • Data base management • Property management
• Query facilities • Source code control

This information system, available in residential and commercial modules, features master file updates and reports for residential and commercial properties, update files for daily logs without tampering with the master files, comparable files to keep sold properties separately for future use in property assessments and negotiations, and flexible query facilities for fast recall of properties satisfying any list of criteria. A powerful data base manager allows you to modify the software, if you buy the source code option. Run-time-only modules are also available.

A version of this product is available for VAX computers.

Price: \$2000 - \$6000

Contact: Michael A. Sce
(718) 377-6998

SOFTWARE CONSULTING ENTERPRISES, INC.

1360 Ocean Parkway, Apt. 3H

Brooklyn, NY 11230

Real Information

PDP-11 Operating System: CTS-300, RT-11, TSX-PLUS™

Keywords: • Information management • List processing

This farm/ranch or commercial real estate-oriented data base offers Client Information, Comparable Sale Information, Property Information, and Closing Statement. Each stand-alone program can be purchased separately. Client Information offers mailing lists sorted alphabetically or by ZIP code and complete information on a prospect, with comments that are dated and stored for future reference. Comparable Sales offers immediate reference by sale number or seller's name. Property Information offers quick reference for listings by number or name of seller. Closing Statement handles all types of real estate transactions, including a statement for the writing of the escrow checks.

This software has been tested by other firms since 1982 and is bug free.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$4000

Contact: Jim Hayes

(806) 874-3546

JAMES F. HAYES & CO.

P.O. Box 1004

Clarendon, TX 79226

REALISE Real Estate Office Automation System

PDP-11 Operating System: RT-11

Keywords: • Information management • List processing
• Management • Office systems

Memory required: 10MB hard disk storage and 256KB RAM.

This comprehensive package of integrated programs reduces the labor-intensive tasks of real estate brokers, associates, and processors to user-friendly menu-driven programs that print in seconds. The complete array of management reports allows brokers or managers to pinpoint both their business and that of their competition.

When a home is sold, REALISE allows the processor to order all the necessary services to get that home to settlement with one keystroke. Comparable sales, FHA/VA/CONV qualifying, buyer's worksheets, seller's proceeds, credit reporting, and mass-mailing programs are also included to reduce office time and to increase productivity throughout the office.

Also included are motivational and goal-setting programs to help brokers keep their sales associates working. In addition, REALISE farming program allows individual associates to keep detailed histories on all homes in their farming territories, including names and birthdays of owners and children, previous owners, and sales prices, and can mail to expired listings particular home styles, listing on the market, and more.

REALISE is written in Oregon Software Pascal-2 and MACRO-11 and runs on PDP-11/23, 11/23 +, and 11/73 hardware systems.

Price: \$5794

Contact: James R. Tillman or Thomas J. Kappeler
(609) 877-7118 or 235-0110

REALISE

Country Club Plaza, Beverly-Rancocas Road
Willingboro, NJ 08046

Residential Property Management

PDP-11 Operating System: CTS-300, RSTS, RT-11

Keywords: • Accounting • Accounts receivable • Billing
• Property management

This easy-to-use series of interactive programs, designed for building managers demanding complete financial control, stores instant-access information about projects, buildings, units, and leases, as well as user-defined parameters, such as sundry adjustments, unit sizes, and miscellaneous charges and deposits. Used in combination with transaction postings (rental posting, cash receipts, refunds, and so on), revenue summary, control, lease status, rent roll, and arrears reports are available. The Residential Property Management system features multiple-unit types, multiple leases, master parameter flexibility, transaction processing, history transactions, automatic rent calculation, notices, general ledger, deposit slips, rental increases, vacancy inquiry, sublets, and NSF checks.

A version of this product is available for VAX computers.

Price: \$3000 - \$15,000

Contact: Tom Muskiluke
(519) 893-4200

DIGITAL BUSINESS COMPUTERS

133 Manitou Drive

Kitchener, Ontario N2C 1L4 Canada

RESPAC (Real Estate Sales Data Retrieval Package)

PDP-11 Operating System: RSTS

Keywords: • Data base management • Property management
• Query facilities • Sales analysis

The RESPAC data base management system, used for local areas or for statewide coverage, provides menu-driven on-line inquiry of real estate sales transactions. RESPAC includes up to eight systems for residential and commercial sales retrieval needed by realtors and appraisers.

Price: \$5000 - \$50,000

Contact: R. Howard Sears
(405) 843-6626

MARKET DATA RESEARCH, INC.

5500 N. Western Avenue, Suite 115

Oklahoma City, OK 73118

TSI P-M (Project Management)**PDP-11 Operating System:** RSTS, RSX, RT-11, TSX-PLUS™**Keywords:** • Investments • Property management

This package accommodates retail, commercial, shopping center, industrial, and residential property types, incorporating lease management, investment analysis, and rental functions into a single integrated package. The software is compatible with TSI JobCost and the following MCBA modules (Version 6.1 or later): General Ledger, Accounts Payable, Accounts Receivable, Payroll, and Fixed Asset Depreciation integrated packages.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$15,000**Contact:** Fred Ross

(505) 524-2154

TECHNICAL SOLUTIONS, INC.

P.O. Box 1148

Mesilla Park, NM 88047

UDS PMAS (Property Management Accounting System)**PDP-11 Operating System:** RT-11**Keywords:** • Accounting • General ledger
• Property management

This complete system for multioffice companies provides monthly P&L for each office, as well as consolidated accounting with prior-year and budget comparisons, accounts receivable, accounts payable with vendor 1099, payroll, construction investment, and schedules for fixed assets, notes payable, notes receivable, and other schedules as needed by the customer. Property management features include the handling of commercial and residential properties; a tenant profile showing lease management information for commercial tenants; automatic accrual of rent and late charges; an operations statement showing detail of activity on each property; owners' year-to-date report, P&L with budget comparison, cash flow, and occupancy report for each property; and delinquency, lease expiration, and security deposit reports for each tenant. The computer prints checks to property owners, vendors, and mortgage companies. Form 1099s for owners and vendors are provided.

The UDS Property Management System can be integrated with the UDS systems for real estate and insurance accounting. All UDS systems are delivered with word processing capability.

Price: \$4800 - \$12,000**Contact:** William P. Irwin, Jr., Director of Marketing

(404) 724-7761 or 1-800-241-2404

UNITED DATA SYSTEMS, INC.
501 Greene Street, Suite 220
Augusta, GA 30901

UDS Real Estate Sales Analysis

PDP-11 Operating System: RT-11, TSX-PLUS™

Keywords: • Data base management • Inventory
• Property management • Sales analysis

Memory required: 128KB.

This package, written in COBOL, offers complete inventories of active, expired, and expiring listings and closed and pending sales. Each report shows the property address, price, and date listed and expiring, as well as the potential, lost, or earned commissions for the listing agent, selling agent, and company dollar. A potential-revenue report can be generated to show the anticipated cash flow over the next number of days specified, based on the expected closing dates of pending sales. Monthly and year-to-date agent-activity reports and commission statements showing income and expense items for each sales agency are readily available. Automatic commission calculations, market-trend analysis, client follow-up, and relocation/referral are featured.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$1900 - \$4800

Contact: William Irwin

(404) 724-7761 or (800) 241-2404

UNITED DATA SYSTEMS, INC.

501 Greene Street, Suite 220

Augusta, GA 30901

UDS REAS (Real Estate Accounting System)

PDP-11 Operating System: RT-11

Keywords: • Accounting • General ledger
• Property management

This complete system for multioffice companies provides monthly P&L for each office, as well as consolidated accounting with prior-year and budget comparison, accounts receivable, accounts payable with vendor 1099, payroll, construction investment, and schedules for fixed assets, notes payable, notes receivable, and other schedules as needed by the customer. The real estate features include accounting for commissions payable and earnest money escrow; an inventory of listings — active, expired, and expiring next month; pending sales reports showing projected income for agent, office, and company; closed-sales information retained to provide client followup, market trend analysis, and agent production analysis; reports for listings, pending sales, and closed sales that are available by sales office and the entire company and that show potential and earned commissions for agent, office, and company dollar; and ranking of agents by listings, sales, and commissions earned.

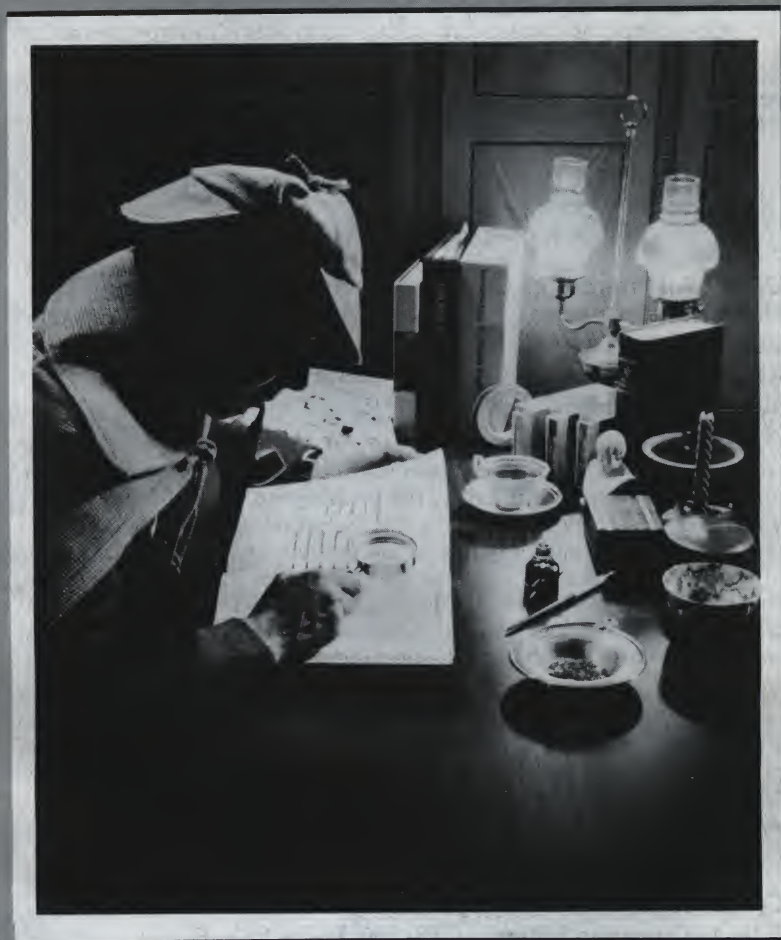
The UDS Real Estate Accounting System can be integrated with the UDS systems for Property Management and Insurance Accounting. All UDS systems are delivered with word processing capability.

Price: \$4800 – \$12,000

Contact: William P. Irwin, Jr., Director of Marketing
(404) 724-7761 or 1-800-241-2404

UNITED DATA SYSTEMS, INC.
501 Greene Street, Suite 220
Augusta, GA 30901

Research



Automated Powder Diffraction Data Collection and Analysis

PDP-11 Operating System: Micro/RXS, RSX

PRO Operating System: P/OS

Keywords: • Chemical • Geoscience • Metals
• Pharmaceutical

This program for the automation of an X-ray powder diffractometer provides data collection and analysis: peak finding, data smoothing, computer-aided phase identification, graphics display, plotting search/match on user and JCPDS data bases, quantitative analysis (six models), line profile analysis for microstrain, stress analysis, profile fitting, and crystallographic analysis (lattice parameters, indexing). One computer system can operate up to four diffractometers.

A version of this product is available for VAX computers.

Price: \$4200 - \$25,000

Contact: Dr. James W. Edmonds
(201) 529-3800

PHILIPS ELECTRONIC INSTRUMENTS, INC.
85 McKee Drive
Mahwah, NJ 07430

CALC: An Interactive Computer Language with Unlimited Numerical Precision

PDP-11 Operating System: RT-11

Keywords: • Calculation aids • Interpreters • Scientific

Memory required: 24K words.

CALC accepts simple BASIC-like statements and performs scientific computations with as many decimal digits as the user wishes, the upper limit being determined by the memory size of the computer. The variable names are restricted to a single character from A to Z. No DIM statement exists, and only one array (called ARR) is available. The programming feature is implemented using files in auxiliary storage; the program size is limited only by the file space. The fundamental trigonometric and logarithmic functions are included. The internal representation of numbers is the floating-point binary-coded decimal.

The CALC interpreter is coded in ANSI FORTRAN and has been tested to work unaltered on both the Univac 1108 under Exec 8 and the PDP-11/10 under RT-11. Approximately 100 to 200 decimal digits of precision can be used on a PDP-11/10 with 24K words of memory. DECUS number 11-369.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

CHROM (Chromatography Graphics and Analysis)

PDP-11 Operating System: CTS-300, RSTS, RSX, RT-11

Keywords: • Chemical • Engineering • Graphics
• Numerical analysis

This interactive program plots and quantitatively analyzes up to two sets of chromatography data, based on sequential samples obtained from one or two chromatographic analyses. Data is stored in one or two 2- to 4-column files. File names and column identifiers (abscissa and ordinate axes) are input interactively, as are several other user options. Entire chromatograms or portions of interest are plotted and scaled automatically. One or both chromatograms are analyzed by numerical integration of all peaks. The results are expressed directly on the same plot, at the same time, as a percentage in each peak of the total ordinate units recovered in the chromatogram — for example, percent in each peak of total radioactivity cpm recovered in all chromatographic samples.

The program is written in FORTRAN, in modular form, for the VT55 graphics terminal. Adaptation to other terminals/devices should not be difficult. Full source code is provided.

A version of this product is available for VAX computers.

Price: \$500 +

Contact: Dr. Joseph J. DiStefano III, Professor
(213) 825-7482 or 825-4033

UNIVERSITY OF CALIFORNIA, LOS ANGELES

School of Engineering and Applied Science

Biocybernetics Laboratory, 4731K Boelter Hall

Los Angeles, CA 90024

CHROMPAK (Chromatography Analysis Package)

PDP-11 Operating System: CTS-300, RSX, RT-11

Keywords: • Chemical • Data collection • Engineering
• Health care

CHROMPAK helps collect and analyze chromatography data. Modular programs are quickly adapted to a variety of measuring instruments and collection techniques. The following programs are available:

- DATAIN collects and stores data from a gamma or beta counter, spectrophotometer, and so on. Data files are multicolumn, ASCII format for use with other utilities.
- PEAKS analyzes data files and reports on total data, location and percentage of peaks, percent total recovery, and other invaluable statistics.
- SUMGRAM sums or integrates all the data in a file (chromatogram).
- CHROMPLOT displays one or two chromatography files on a CRT terminal. Functions are same as CHROM.
- BKSUB accepts two input files — one data file and one instrument noise file. The output is a file with noise subtracted from data.
- DELA, DELB strips off one or more columns from a multicolumn data file.
- CORRECT allows the user to adjust data values to compensate for machine or technique idiosyncrasies, such as tube geometry or volume correction for a gamma counter.

1210 Research

- NORM normalizes a multicolumn file to time, volume, and so forth.
- ZEROSERT inserts zero data values in a data file.

A version of this product is available for VAX computers.

Price: \$1000 – \$2000

Contact: Dr. Joseph J. DiStefano III, Professor
(213) 825-7482

UNIVERSITY OF CALIFORNIA, LOS ANGELES
School of Engineering and Applied Science
Biocybernetics Laboratory, 4731K Boelter Hall
Los Angeles, CA 90024

CLIN-TEAMS®

PDP-11 Operating System: RSX

Keywords: • Data collection • Health care • Medical
• Scientific

This integrated system of programs for the clinical trial environment collects data on computers as small as a single-user system and is offered in a BASIC-PLUS-2 version. Data, collected by filling in case report form images on the CRT, is transferred at predetermined intervals for integration into the central data base.

Data collection formats for new studies can be set up (protocol compiled) interactively without reprogramming. Branching logic in the system directs the user to specific questions based on the response to the current question.

This flexible, user-friendly system is both menu driven and protocol driven. A monitoring report-generating facility lets you tailor interim reports and unload the data to a sequential data file for use with statistical analysis programs, such as SPSS, BMDP, and SAS.

Other programs can run while CLIN-TEAMS is being used, allowing it to fit well into a multiuser, multiprogramming environment on the host computer.

A version of this product is available for VAX computers.

Price: \$46,000

Contact: Floyd E. Leaders, Jr., Ph.D.
(214) 386-5764

TECHNICAL EVALUATION AND MANAGEMENT
SERVICES, INC.
13601 Preston Road, 820 Carillon Tower West
Dallas, TX 75240

DATRAIN

PDP-11 Operating System: RSX, RT-11

Keywords: • Biology • Data collection
• Device drivers/handlers • Engineering

DATAIN is a computer/laboratory instrument interface written in C. DATAIN is adaptable to any instrument with an asynchronous serial (RS232) interface.

The program establishes contact with the instrument, conditions I/O channels, and opens input files. The operator is then prompted to begin data transmission. Operator intervention is not necessary until collection is stopped. Thus, DATAIN can be run unattended for long periods.

Files are automatically named by date or may be individually named by the operator. The data is error checked at input and is stored as ASCII characters for easy interpretation and manipulation by other program tools.

A version of this product is available for VAX computers.

Price: \$500 – \$1000

Contact: Dr. Joseph J. DiStefano III, Professor
(213) 825-7482 or 825-4033

UNIVERSITY OF CALIFORNIA, LOS ANGELES
School of Engineering and Applied Science
Biocybernetics Laboratory, 4731K Boelter Hall
Los Angeles, CA 90024

Elliptic Integrals and Functions

PDP-11 Operating System: RT-11

Keywords: • Calculation aids • Mathematics
• Programming tools

Elliptic consists of a set of FORTRAN-callable subroutines that calculate complete elliptic integrals of first and second kind; incomplete elliptic integrals of first, second, and third kind; and Jacobian elliptic functions am, sn, cn, and dn for real modules and arguments. DECUS number 11-676.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

European MINC Package #5 — Data Analysis

PDP-11 Operating System: RT-11

Keywords: • Biology • Dental • Signal processing

The following is a brief description of the programs:

- CURFON — A regression program cleaning out experimental spectrum
- USQUE — User question (treatment of surveys)
- DAMIX — Computer mix of variables for regression; a new version of a MAP 1 program
- ROTAN — A rotational signed analysis program; Fourier signal analysis (up to 20 kHz input signal)
- EMAFIT — High-precision experimental curve fitting
- CEPH — Orthodontic evaluation of lateral skull radiographics, using a (SAC) Graf pen and a GP-6-20 digitizer

- AVERAG — A general average package for biochemical signal processing
- VARRITT — A 1-way analysis of variance
- Plant identification by generalized least-squares method

DECUS number 11-576.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

FEP2: A Finite Element Program for 2- and Axisymmetric 3-Dimensional Continua

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Materials handling • Mathematics

• Modeling/simulation

Memory required: 28K.

FEP2 is a program for the analysis of elastic solids. Both constant strain and higher-order continuum elements are included, along with a special element for incompressible media. The program uses an out-of-core skyline equation solver, so the problem size is not restricted by storage of the global stiffness matrix. DECUS number 11-461.

Note: FEP2 was tested under RT-11 but will probably run under all systems.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

FISH: Post- and Interspike Interval Analysis

PDP-11 Operating System: RT-11

Keywords: • Biology • Graphics • Medical • Statistics

Memory required: 4K.

FISH.MAC generates two programs that collect, display, and store intervals between single neuronal action potentials in real time. ISH counts and orders absolute intervals between spikes; PISH collects and sums spike intervals after synchronizing pulses. Histograms are constructed and displayed on a VT55 graphics terminal. The data acquisition rate is 1 kHz, using double-precision arithmetic. A version that executes on a MINC system with MNCKW is included. DECUS number 11-320.

Note: Quanda overruns have been fixed.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

FITPACK Curve and Surface Fitting Package

PDP-11 Operating System: ULTRIX-11

PRO Operating System: P/OS

Keywords: • Mathematics

FITPACK is a collection of FORTRAN programs for curve and surface fitting, using spline functions. Automatic knot selection, error smoothing, and data reduction are included. The user provides a parameter by which to control the trade-off between closeness of fit and smoothness of fit. Confidence limits for that parameter are available if the statistical errors on the data points can be estimated.

In addition to a standard routine for curve fitting over an interval and a routine for surface fitting over a rectangle, the package contains special programs for smoothing periodic functions, parametric curves (closed or otherwise), functions with convexity constraints, and data over a rectangular grid and over the sphere or a disk. Routines are included for evaluating, differentiating, and integrating the spline approximations.

A version of this product is available for VAX computers.

Price: \$50

Contact: Paul Dierckx
32-1-620-0656

KATHOLIEKE UNIVERSITEIT LEUVEN

Department of Computer Science

Celestijnenlaan 200 A

B-3030 Heverlee Belgium

FORTH: Programming System

PDP-11 Operating System: RT-11

Keywords: • Compilers • Mathematics • Programming tools
• Text management

Memory required: 8K (16K + for assembly).

FORTH is a self-contained programming system for scientific applications requiring interactive control and data acquisition. The system supports a high-level structured language using reverse Polish notation and contains an incremental compiler, an assembler, and a text editor. RT-11 FORTH maintains any number of RT-11 disk files. Application packages are included for an extended text editor and floating-point mathematics. DECUS number 11-232.

Restrictions: This version of FORTH does not have stand-alone capability. DECUS does not have a version of FORTH that runs under RSX.

Associated documentation: Users must obtain *Caltech FORTH Manual* (second edition) from the Caltech Bookstore, California Institute of Technology, Pasadena, CA 91125.

Note: FORTH will use EAE, EIS, or FIS options if present. A companion DECsystem-10 version is available as DECUS number 10-241.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

GAB (General Program for the Analysis of Biopotentials)

PDP-11 Operating System: RT-11

Keywords: • A/D, D/A • Medical • Scientific
• Signal processing

Memory required: 96KB.

This program records electrically evoked potentials from visual, auditory, somatosensory, and other sensory systems for electrodiagnostic and physiological research. GAB measures and averages those potentials in animal and human subjects. GAB is applicable to evoked potentials of all biological amplitudes and time ranges and can serve both research and clinical work.

A detailed protocol including the subject's name and number and the physiological and recording conditions is written before the measurement procedure begins. The potentials are delivered synchronously to the computer from conventional electrophysiological equipment, including electrodes and preamplifiers. The rate of stimulation is scheduled by the user; options include constant, random, and preselected intervals between stimuli.

During and following the averaging procedure, the biopotentials are displayed on a VT125 graphics terminal. You can then measure all parameters of latency (reaction time) and amplitude, using measuring markers that you control. Upon resuming each recording, averaging, and measuring session, the numerical results, including standard error of the mean, are printed along with the detailed protocol. The averaged or single responses are then plotted by a digital plotter.

The data of the averaged and single original responses (raw data) is saved on diskettes. This data can be used for further off-line measurements or retrieval of the averaged or single responses.

The program was written on a DIGITAL LSI 11-23 microcomputer in FORTRAN and MACRO-11 assembly language. A/D sampling frequency is up to 20 kHz. The program requires an analog/digital input board, a parallel line interface, and a programmable clock.

Price: \$500 - \$950

Contact: U. Yinon or M. Cohen
(03) 711899

GOLDSCHLEGER EYE RESEARCH INSTITUTE
Tel-Aviv University, Chaim Sheba Medical Center
Sackler Faculty of Medicine
Tel Hashomer 52621 Israel

Gamma Spectroscopy Applications Package

PDP-11 Operating System: RSX, RT-11

Keywords: • Calculation aids • Instrumentation • Nuclear
• Scientific

This set of programs, written in FORTRAN, performs quantitative analysis of high-resolution gamma-ray spectra. The package enables a

user to control and transfer data to/from a multichannel analyzer, as well as to find the area and energy of all photopeaks in a gamma-ray spectrum. Programs include a peak-determination routine, an isotope activity calculation, environmental background subtraction, and system calibration routines. The peak-determination program allows multiplet resolution (deconvolution) of up to 10 peaks in a single region, yielding peak area, energy, and statistics. The environmental background routine includes background subtraction, correction for interfacing or unresolvable peaks, and a weighted-mean activity calculation for isotopes having multiple peaks.

An optional quality assurance package provides a means to verify and record spectroscopy system performance over time.

A version of this product is available for VAX computers.

Price: \$4250 – \$10,000

Contact: R. J. Schlossmann
(312) 884-3627

NUCLEAR DATA, INC.
Golf and Meacham Roads
Schaumburg, IL 60196

GLIM-3

PDP-11 Operating System: CTS-300, IAS, RSTS, RSX, RT-11

Keywords: • Education • Mathematics • Modeling/simulation
• Statistics

GLIM-3 was developed by the British Royal Statistical Society for generalized linear modeling, vector calculation with various output options, data exploration, and teaching. As a modeling aid, GLIM-3 handles linear, loglinear, logit and probit models, and models with gamma errors. Specification of standard models is simple but powerful, allowing refinements, such as prior weights and the fixing of certain parameter values. Any generalized linear model can be handled and robust regression procedures developed. Powerful macro definition facilities are available.

GLIM-3 can operate with general arithmetic expression on vectors and scalars; subvectors are easily manipulated. The package can be used interactively or in batch mode. Interactive use is appropriate to data exploration — for instance, in the search for linearity-inducing transformations. As a teaching aid, GLIM-3 lets the student concentrate on the statistical aspects of a problem without concern about arithmetic.

GLIM-3 consists of a single FORTRAN program of about 11,500 lines, of which about 40% are comments. The program runs efficiently in an overlaid form.

In North America, contact James C. T. Pool (312) 971-2337, Numerical Algorithms Group, Inc., 1101 31st Street, Suite 100, Downers Grove, IL 60515.

A version of this product is available for VAX computers.

Price: £180 – £360

Contact: Janet Webb

+ 44 865 511245

NUMERICAL ALGORITHMS GROUP LTD.

Mayfield House, 256 Banbury Road

Oxford OX2 7DE United Kingdom

IDL (Interactive Data Language)

PDP-11 Operating System: RSX

Keywords: • Engineering • Graphics • Scientific

This interactive software system analyzes, reduces, and displays scientific and engineering data. IDL combines self-describing array-oriented data sets, operators, functions, and powerful graphic and image-display capabilities into a complete interactive system. Applications include physics, astronomy, medicine, engineering, and image processing.

A version of this product is available for VAX computers.

Price: \$2750 – \$10,700

Contact: David M. Stern

(303) 399-1326

RESEARCH SYSTEMS, INC.

2021 Albion Street

Denver, CO 80207

IPACS (Interactive Pattern Analysis and Classification System)

PDP-11 Operating System: RSX

Keywords: • Artificial intelligence • Decision support

• Signal processing • Statistics

Memory required: 512KB (minimum), 1.5MB (preferred) with a 10MB or larger hard disk.

This interactive, menu-driven software system, developed jointly with Dr. E. S. Gelsema, Amsterdam, Netherlands, was designed for developing decision tree recognition systems, using statistical and nonstatistical pattern recognition techniques. The result of the design stage is a graphics-oriented expert pattern recognition system that can be quickly tested and iteratively designed to yield a decision tree. Applications include medical waveforms and images, military signals and patterns, commodity market patterns, and geophysical and radar signal patterns.

The system, written in FORTRAN-77, has been installed in several research centers in the United States, Europe, and Japan. A graphics terminal is required.

A version of this product is available for VAX computers.

Price: \$30,000

Contact: Dr. Laveen N. Kanal
(301) 927-3223

L.N.K. CORP.

303 Notley Court

Silver Spring, MD 20904

Laboratory Applications-11 Library

PDP-11 Operating System: RT-11

Keywords: • Calculation aids • Chemical • Electrical
• Scientific

These software modules and operational programs are designed to solve typical laboratory problems. The library provides a group of software modules that, when linked with a user-written calling routine, results in a program to solve many laboratory computer applications. User-developed modules, following well-defined guidelines and rules, can be combined with library modules to generate tailored programs. DECUS number 11-448.

Note: The manual describes the functional characteristics of a particular module, programming information, and release notes.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

LSP-11 (Laboratory Subroutine Package)

PDP-11 Operating System: RSX, RT-11

Keywords: • Calculation aids • Data collection

These FORTRAN-callable subroutines perform standard analytical tasks commonly encountered in the laboratory. The subroutines are dedicated to processing data that has been acquired by other laboratory data-acquisition software.

The LSP-11 provides the user with subroutines for peak processing, envelope processing, interval histogramming with reference points, fast Fourier transform, phase angle and amplitude spectrum, power spectrum, and correlation function.

Refer to SPD #15.44.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1050

Contact: Consult your local DIGITAL sales office (see Introduction).

MICRODARE

PDP-11 Operating System: RSX, RT-11

Keywords: • Engineering • Modeling/simulation
• Networking • Scientific

MICRODARE is a direct-executing interactive system for laboratory automation, simulation, and control. Written and edited on a CRT terminal screen, this high-level language executes directly on a typed RUN command and runs at about one-half assembly-language speed.

No separate editor, compiler, or linker is needed. MICRODARE/NET permits programming of multiple concurrent tasks running on multiple PDP-11s or LSI-11s, one of which can control the entire system with MICRODARE commands.

Price: \$1600 - \$2400

Contact: Dr. Ralph Martinez
(602) 621-6174

UNIVERSITY OF ARIZONA

Dept. of Electrical and Computer Engineering
Tucson, AZ 85721

Minitab® Data Analysis Software

PDP-11 Operating System: Micro/RSTS, RSTS, RSX, RT-11,
TSX-PLUS™

PRO Operating System: P/OS

Keywords: • Engineering • Mathematics • Numerical analysis
• Statistics

This general-purpose data analysis system is written in FORTRAN for engineers, social and physical scientists, managers, educators, students, statisticians, and others who need to learn from data. Minitab is 100% compatible in both batch and interactive modes and is also completely compatible among all supported processors. Data analysis features include descriptive statistics; flexible plotting, including histograms and other displays; multiway tables in various layouts; regression with residual analysis; diagnostics and stepwise procedures; analysis of variance; nonparametric methods; and exploratory data analysis, including Box-Jenkins procedures. General features include easy transformations and coding, automatic handling of missing values, data editing and manipulation, and input/output from terminals or files.

Complete documentation is available in the *Minitab Reference Manual*, the *Minitab Handbook*, and the *Quick Reference Card* and through the on-line help facility.

Most Minitab sessions require just a few straightforward commands; new users need less than one hour to get started.

The price range for academic users is \$500 to \$900.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$1000 - \$1800

Contact: Mary E. Montminy or Vicki L. Jodan
(814) 238-3280

MINITAB, INC.

3081 Enterprise Drive
State College, PA 16801

MLP (Maximum Likelihood Program)**PDP-11 Operating System:** RSX**Keywords:** • Mathematics • Modeling/simulation
• Numerical analysis • Statistics

This general statistical model fitting program provides many standard models, curves, discrete distributions, continuous distributions, assay analysis, linear regression, genetic models, and transition matrix models. For general models, the error distribution can be weighted normal, binomial, Poisson, multinomial, Gamma, or negative binomial. Equally spaced observations can be serially correlated. Expectations and weights can be any computable function of parameters.

The MLP language is simple for standard applications. Directives and option settings control input, choice of model, fitting, and output. General models, in which variables and parameters and scalars can be given user-defined names, are defined. Intermediate results can be stored, transformed, or output to interface with other programs. Help and diagnostic facilities are provided.

MLP consists of a single FORTRAN program of about 23,000 lines, which compiles to about 300 kilobytes on most computers.

A version of this product is available for VAX computers.

Price: £156/yr – £312/yr**Contact:** M. G. Richardson
+ 44 865 511245

NUMERICAL ALGORITHMS GROUP LTD.

Mayfield House, 256 Banbury Road
Oxford OX2 7DE United Kingdom**NAG FORTRAN Library Service****PDP-11 Operating System:** RSX, RT-11**Keywords:** • Mathematics • Scientific • Statistics

The NAG FORTRAN Library Service develops, issues, updates, maintains, and supports the NAG Library of subroutines, a tailored collection of FORTRAN subroutines grouped into chapters of mathematics, operations research, and statistics. Within a chapter, each algorithm is selected to solve an identified type of problem. The Mark 11 NAG Library contains 524 subroutines.

The *NAG Library Manual* has the same chapter structure as the library. Each subroutine has a document describing the routine and providing a program listing with input data and results. Each chapter introduction gives extensive advice on the selection of routines. An interactive on-line documentation supplement and a graphics supplement, including interfaces to many standard graphic devices, are available.

The NAG Library Service, available through a license agreement on an annual-fee basis, includes regular updating of the library contents;

installation, maintenance, and support documentation; user documentation; and an algorithms inquiry service.

A version of this product is available for VAX computers.

Price: \$1600/yr - \$2700/yr

Contact: John Reeves

+ 44 865 511245

NUMERICAL ALGORITHMS GROUP LTD.

Mayfield House, 256 Banbury Road

Oxford OX2 7DE United Kingdom

Nal Data Reduction

PDP-11 Operating System: RT-11

Keywords: • Instrumentation • Medical • Nuclear
• Scientific

The Nal program provides a least-squares fit of an unknown spectrum to spectra of up to 10 standards. The program, using the algorithms of the ALPHA-M program written at Oak Ridge National Laboratory, is designed to resolve spectral data collected from sodium iodide or other low-resolution detectors into its component parts. The user specifies the type of analysis to run and the number of possible components in the unknown spectrum. Inconsistent results are flagged for further investigation.

Price: \$1000

Contact: Dan Murphy, Product Support Engineer

(312) 884-3627

NUCLEAR DATA, INC.

Golf and Meacham Roads

Schaumburg, IL 60196

Neutron Activation Analysis

PDP-11 Operating System: RSX, RT-11

Keywords: • Chemical • Instrumentation • Nuclear
• Scientific

This package provides quantitative analysis of samples through either the comparative method or the reactor flux monitoring method. The comparative technique allows multiple standards for each chemical element, averaging results for all standards to calculate a calibration coefficient. The flux monitoring method is internal in methods of standardization.

This package is written in FORTRAN and is structured to allow easy user customization.

A version of this product is available for VAX computers.

Price: \$2000 - \$5000

Contact: Tom Meyers, Product Support Engineer

(312) 884-3627

NUCLEAR DATA, INC.
 Golf and Meacham Roads
 Schaumburg, IL 60196

NORTON (Astronomical Ephemeris Program Package)

PDP-11 Operating System: RSTS

Keywords: • Calculation aids • Modeling/simulation
 • Scientific • Word processing

Memory required: 8K.

This BASIC-PLUS package gives planet and asteroid positions for any date from January 1, 1900. NORTON runs under RSTS Version 4 or 5 (8K job maximum). The package includes astronomy, a planetary position calculator, word processing, and solar system simulation. DECUS number 11-163.

Restrictions: No graphics programs are provided.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

OSS (Optimal Sampling Schedule Designs)

PDP-11 Operating System: CTS-300, RSX, RT-11

Keywords: • Biology • Data collection • Pharmaceutical
 • Statistics

OSS is a series of portable FORTRAN programs for computing D-optimal, discrete-time data sampling schedules — designs that maximize the determinant of the Fisher Information Matrix — for different types of standardized and general model and experiment types: “impulse response” or “step response” kinetic experiments in pharmacology and biology for single-input, single-output linear models (built in); multi-input, multioutput linear models (built in); or models of any form by means of FORTRAN user-provided subroutines. Other optimization criteria can be accommodated by substitution of one subroutine. The user has the choice of interactive or batch mode for program input, and both program input and program output are highly readable and user friendly. Telephone demos can be arranged.

A version of this product is available for VAX computers.

Price: \$500 - \$5000

Contact: Dr. Joseph J. DiStefano III, Professor
 (213) 825-7482

UNIVERSITY OF CALIFORNIA, LOS ANGELES
 School of Engineering and Applied Science
 Biocybernetics Laboratory, 4731K Boelter Hall
 Los Angeles, CA 90024

PEAK-11/M

PDP-11 Operating System: RSX

Keywords: • Instrumentation • Real time • Scientific

Memory required: 128KW.

This laboratory-oriented application system acquires, processes, and stores data from slow or medium peak-producing instruments, such as gas chromatographs, liquid chromatographs, and auto analyzers. PEAK-11/M can also reprocess previously required raw data. DECUS number 11-SP-9.

Note: No source is available for the GEN file.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

PSYCHROM: A Calculating Psychrometric Properties Program

PDP-11 Operating System: RT-11

Keywords: • Calculation aids • Scientific • Software utilities

Memory required: 8KW.

This package of subroutines is for use in calculating psychrometric properties. All values are in SI units. Input combinations of temperature and relative humidity, temperature and dew point, or temperature and wet-bulb temperature can be used with appropriate subroutines to calculate other properties. Properties calculated (including the two used for calculations) are temperature, wet-bulb temperature, dew-point temperature, relative humidity, enthalpy, specific volume, humidity ratio, degree of saturation, and partial pressure of the water vapor. Computational procedures are based on recommendations in the *ASHRAE Handbook of Fundamentals* (1972). A "test" program with data is included to verify and compare routines used for the three possible input combinations. DECUS number 11-759.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

QBLIB (CAMAC Subroutine Library)

PDP-11 Operating System: CTS-300, Micro/RSX, RSX, RT-11

Keywords: • Instrumentation • Nuclear • Process control
• Real time

QBLIB is a set of FORTRAN-callable subroutines and assembly language macros for accessing elements of the standardized instrumentation interface system CAMAC (ANSI/IEEE Standard 583-1982, IEC-516) from Interface Standards' QB Series of Q-bus-to-CAMAC interfaces. Conforming to the recommendations of ANSI/IEEE Standard 758-1979 (IEC-713), "Subroutines for CAMAC," the subroutine calls include single- and multiple-cycle modes, as well as extensive

support for interrupt handling. Those routines in effect make the controller "invisible" and allow an application program to talk directly to the CAMAC instrumentation modules.

QBLIB includes a set of macros to make the same facilities available to the assembly language programmer. Those macros generate fast, efficient in-line code for accessing CAMAC modules.

Price: \$1000 - \$1500

Contact: Joe Buth

(415) 657-5100

INTERFACE STANDARDS, INC.

45845-A Warm Springs Boulevard

Fremont, CA 94539

QUADPACK

PDP-11 Operating System: ULTRIX-11

Keywords: • Mathematics • Numerical analysis
• Software utilities

QUADPACK is a collection of FORTRAN programs for the numerical evaluation of integrals. The programs are designed for 1-dimensional integrals, although some multidimensional problems can be treated by suitably combining the basic routines. The fundamental integration methods are Gauss-Kronrod quadrature rules and modified Clenshaw-Curtis quadrature. The most sophisticated routines use a nonlinear extrapolation algorithm, which is effective for the integration of even strongly singular functions, and have a built-in round-off error guard.

QUADPACK is available in both single-precision and double-precision versions. Each version contains 10 automatic quadrature programs and several nonautomatic ones. The automatic QUADPACK routines provide a simple nonadaptive automatic integrator, a simple globally adaptive integrator, sophisticated integrators based on globally adaptive intervals, subdivision in connection with extrapolation, an integrator for integrals over infinite intervals, integrators for Fourier integrals over finite and infinite intervals, an integrator for integrals with algebraic or logarithmic end-point singularities, and an integrator for Cauchy principal-value integrals.

In the United States, contact I.M.S.L., 2500 Park West Tower One, 2500 City West Boulevard, Houston, TX 77042-3020.

A version of this product is available for VAX computers.

Price: \$80

Contact: Robert Piessens

32-1-620-0656

KATHOLIEKE UNIVERSITEIT LEUVEN

Department of Computer Science

Celestijnenlaan 200 A

B-3030 Heverlee Belgium

RS/1™

PDP-11 Operating System: RSX

PRO Operating System: P/OS

Keywords: • Engineering • Manufacturing • Quality control
• Scientific

This easy-to-use, integrated software system for engineers and scientists provides data management and analysis, statistics, graphics, curve fitting, modeling, and reporting. Users can create presentation-quality graphs, bar graphs, and pie charts with simple commands and fast display and plotting times. RS/1 applications range from basic research to environmental monitoring and quality control in such markets as the chemical, petroleum, pharmaceutical, genetic engineering, and semiconductor industries.

RS/1 also includes a powerful programming language, RPL, that enables users to extend and tailor system capabilities for their applications. RPL is fully integrated into the RS/1 data management system and can be used to develop procedures through direct use of RS/1 commands and procedures and direct access to RS/1 tables, graphs, bar graphs, and models.

A version of this product is available for VAX computers.

Price: \$1900 - \$69,000

Contact: Carolyn Belesca

(617) 864-1780 or (800) 251-1717

BBN SOFTWARE PRODUCTS CORP.

10 Fawcett Street

Cambridge, MA 02238

S531A/S631A ABACOS II

PDP-11 Operating System: RSX

Keywords: • Instrumentation • Nuclear • Quality control
• Scientific

The capability and versatility of the three whole-body counting systems — ACCUSCAN, FASTSCAN, and the 2230 (chair) — lie in this application software. ABACOS II, the body-burden analysis software, represents a high level of sophistication for sodium iodide and germanium detector spectra. ABACOS II can quantify up to 30 isotopes in the background-level spectra. ABACOS II is written in FORTRAN IV, allowing it to be easily upgraded as new analysis algorithms are developed or modified for special applications.

Large $4 \times 4 \times 16$ detectors are used. Sensitivities of three nanocuries and better have been obtained for 1-minute counts. Routines for complete body-burden and dose calculations are included.

Although the three units are generally stand alone, ABACOS II can be integrated to an existing computer system with the proper configuration.

A version of this product is available for VAX computers.

Price: \$5500 - \$6500

Contact: Frazier Bronson
(203) 238-2351

CANBERRA INDUSTRIES, INC.
One State Street
Meriden, CT 06450

SDP-PLUS (Structure Determination Package)

PDP-11 Operating System: Micro/RXS, RSX

Keywords: • Biology • Chemical • Scientific
• Structural engineering

The Enraf-Nonius Structure Determination Package (SDP) solves and refines molecular/crystal structures. The SDP package is written in FORTRAN IV and includes data reduction, absorption correction, phase determination, Fourier calculation, least-squares refinement, calculation of ESDS, mapping, plotting, and program listing.

A version of this product is available for VAX computers.

Price: \$2750 - \$3500

Contact: G. Williams
(516) 589-2885

ENRAF-NONIUS
390 Central Avenue
Bohemia, NY 11716

SDP (Seismic Data Processing)

PDP-11 Operating System: RSX

Keywords: • Data collection • Geoscience • Seismic modeling
• Signal processing

This system provides real-time automatic detection and preliminary analysis of seismic events. Subsequent data analysis and refinement by the scientist is provided by a versatile graphics user/machine interface. The software is written in FORTRAN and consists of several modules, which include event detection using the seismic signal character recognition (SCCR) algorithm, a location and magnitude determination algorithm, refinement capabilities, graphics, geographical maps with event information, spectral analysis, and reports and focal mechanism determination. Since some of the modules are optional, customized packages are available.

A version of this product is available for VAX computers.

Price: \$100,000 - \$300,000

Contact: Frank Kissinger
(214) 271-2561

TELEDYNE GEOTECH
3401 Shiloh Road
Garland, TX 75041

SPON (Spontaneous Activity of Neuronal Spikes)

PDP-11 Operating System: RT-11

Keywords: • Mapping • Mathematics • Medical

Memory required: 64K.

This group of programs is designed to count interspike intervals (ISI) of extracellular neuronal spikes. The user must have a window discriminator to count spikes, as well as a DIN and CLK unit on the MINC. SPON determines mean ISI and variances of the mean ISI, stores all ISIs, and plots frequency histograms of the ISIs. DECUS number 11-555.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

TEAMS®-TOX

PDP-11 Operating System: RT-11

Keywords: • Data collection • Medical • Pharmaceutical
• Scientific

This integrated package of computer software aids in gathering, managing, archiving, and reporting data about laboratory animals. The system is implemented in BASIC and operates on 64K single-user PDP computers, including fully distributed PDP-11/03 (LSI)-based workstation systems, as well as large, centralized PDP-11 systems. The software is compatible with RT-11/TSX operating systems.

Data may be collected on free-standing workstation units in the laboratory. A "simultaneous journaling" option permits on-site generation of hard-copy laboratory records. Data can be transferred back to a host computer at predetermined intervals for integration into the central data base. The system was specifically designed to provide the audit trails required by FDA guidelines.

This extremely flexible, user-friendly system is both menu driven and "protocol driven." Data collection formats for new studies can be set up (protocol compiled) interactively without reprogramming. Branching logic within the system provides the ability to go to specific questions, based on the response to the current question.

TEAMS-TOX has a monitoring report-generating facility that allows one to tailor interim reports to the user's needs. The system also allows one to unload the data file for use with statistical analysis programs such as SPSS, BMDP, and SAS.

This application package allows other programs to be run while TEAMS-TOX is being used. Thus, TEAMS-TOX can fit very well into a multiuser, multiprogramming environment on the host computer.

Price: \$30,000

Contact: Floyd E. Leaders, Jr., Ph.D.
(214) 386-5764

**TECHNICAL EVALUATION AND MANAGEMENT
SERVICES, INC.**
13601 Preston Road, 820 Carillon Tower West
Dallas, TX 75240

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1207 EAST 58TH STREET
CHICAGO, ILL. 60637

Sales and Marketing



Robert Pyle

AAAMIS (Advertising Agency's Accounting and Management Information System)

PDP-11 Operating System: ULTRIX-11

Keywords: • Accounting • Advertising/promotion
• Information management • Media

Designed for advertising agencies, AAAMIS supports all advertising functions. Despite its power, AAAMIS is user friendly, fast, and reliable. Its menu-driven format, numerous prompts and messages, help features, error trapping, and sophisticated data backup and recovery procedures make AAAMIS simple to use even for those with no prior computer experience. AAAMIS is composed of the media processing, production processing, accounts receivable, general ledger, and accounts payable modules.

A version of this product is available for VAX computers.

Price: \$3750 - \$12,000

Contact: Steve Gordon

(617) 965-5059

BETA PRINCIPLES

203 Beethoven Avenue

Newton, MA 01940

C-11 Sales Order Processing

PDP-11 Operating System: RSTS, RSX, RT-11, TSX-PLUS™

PRO Operating System: P/OS

Keywords: • Accounting • Order processing • Report writer
• Sales analysis

The package provides order inquiry for instant information access; processing of back orders and returned goods; printing of packing slips, invoices, and credit memos; the option to print an invoice at the time an order is shipped; a cash sales option; an open-order report with breakdown by order status; an optional inventory interface with on-line update of on-hand and committed quantities; an optional general ledger interface for automatic posting of sales, credit, and cash receipt totals; a job cost interface with input by job and phase for customer billing; an accounts receivable interface for posting and tracking invoiced orders; sales analysis with reports sorted by customer, product category, inventory item, salesperson, or invoice date; and parameter selection on reports by customer, inventory item, order number, and order status.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$1500 - \$3000

Contact: Denis Peterson

(516) 483-3123

CBM ASSOCIATES, INC.
955 Front Street
Uniondale, NY 11553

Call Tracker

PDP-11 Operating System: Micro/RSTS, Micro/R SX, RSTS, RSX

Keywords: • Accounts receivable • Data base management
• Scheduling • Telecommunications

This telephone history data base and phone dialer keeps track of who to call, when to call, and what was said in past conversations. A review command displays the names of people scheduled for followup. People are selected by interest level, category, follow-up date, time zone, or any combination thereof.

The program is written in DIBOL and uses the standard file support provided by Record Management Services (RMS). Call Tracker can handle as many users as there are terminals. Each user has a dialer that connects between the terminal and the computer. The dialer also attaches to the desk phone and works with standard single- and multiline telephones.

Call Tracker works with AT&T, MCI, Sprint, and most long-distance services; the simple installation takes only a few minutes. Call Tracker is self-teaching, guiding the user with menus and concise, simple messages. The full-screen editor and single-keystroke commands can be learned in the first session.

Each user can have up to eight data bases, including customers, sales reps, company sales people, vendors, or company management. Several users can share a common data base.

This highly interactive program gives telephone history by company or contact name, displays the outcome of past conversations, and dials any one of three contacts with one keystroke. The person's history is temporarily updated with a status — busy, left message, out, or no answer — until he or she is reached. When the person is reached, a history of the conversation is recorded.

The program prints labels, envelopes, and reports. Call Tracker interfaces to the list-processing feature of most word processors.

Each dialer costs \$160. The package comes with a 1-year full warranty.

Call Tracker also runs on A-to-Z and is fully integrated with A-to-Z on the MicroVAX and MicroPDP-11 computers.

A version of this product is available for VAX computers.

Price: \$700 — \$1950

Contact: Saeed Jalali
(213) 202-0785
ORIGIN, INC.
9136 Gibson Street
Los Angeles, CA 90034

Cost Estimating

PDP-11 Operating System: ULTRIX-11

Keywords: • Calculation aids • Decision support
• Manufacturing

This fully integrated, on-line, multiuser, UNIX*-based cost estimating system prompts the user for information and calculates estimated costs by operation. An estimate confirmation can be printed and held pending customer approval. When a customer order is received, it can be compared to the estimate, which can be revised as necessary. The detail from the estimate becomes the starting point of estimate-versus-actual comparison in the Job Costing system. The Cost Estimating system can be integrated with the Job Costing system. Management reports can be produced, using the information from the estimating system, such as analysis of open estimates by customer, salesperson, and product type; and comparison of estimates versus orders by customer, salesperson, and product type.

Also available are a print key providing hard copy of any screen image, true multiuser design for concurrent program use, built-in multicompny/multidivision support, and a user-assigned predefined company/division or option to specify company/division. Timely information is ensured through the automatic updating of G/L from all modules.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Laurel McDaniel
(312) 332-3242

NEAL NELSON & ASSOCIATES
185 N. Wabash, Suite 1908
Chicago, IL 60601

CP-11 Coupon Redemption System

PDP-11 Operating System: Micro/RXS, RSTS

Keywords: • Advertising/promotion • Distribution
• Order processing • Wholesale

The coupon redemption system is for firms that presell merchandise, based on an annual purchase commitment. The customer receives a discount on the merchandise, pays for the purchase of material, receives a book of coupons, and redeems them for merchandise during the term of the contract. For example, this product is useful for companies that have repeat, large-volume sales of such items as office and copier supplies and paper.

The system accepts contract information, verifies the product information against the inventory file, and generates information for automatic invoicing. As coupons are redeemed, the redemption information is entered into the system. Redemptions and outstanding coupons can be reported on date-driven parameters.

The order entry component of the system provides a control that prevents overshipment of merchandise sold through the coupon system, with the coupon system recognizing an attempted overredemption of coupons. The user has complete override capability if the situation warrants, thus providing a solution to lost coupons or attempts to redeem expired coupons.

The Coupon System is designed to interface closely with the Order Entry/Inventory Control products developed by Compu-Share, Inc., and sold by Simco, Inc.

A version of this product is available for VAX computers.

Price: \$1600 – \$2500

Contact: William L. Dempsey
(702) 384-7641

SIMCO, INC.

801 S. Rancho Drive, Suite E2B
Las Vegas, NV 89106

Direct Marketing and Mail Order Management System

PDP-11 Operating System: DSM (DSM-11)

PRO Operating System: MUMPS®

Keywords: • Advertising/promotion • Presentation aids

This series of modules demonstrates our special expertise in tailoring and designing direct marketing and mail order management systems. We implement direct mail and catalog systems, continuity programs, direct response advertisement, and package inserts.

A customer usually retains us first to produce customized specifications, which are then translated into an operational system.

MUMPS® is a registered trademark of Massachusetts General Hospital.

A version of this product is available for VAX computers.

Price: \$15,000 – \$100,000 +

Contact: Alexander J. Phillips, President
(201) 256-7633

INTERACTIVE SYSTEMS AND MANAGEMENT CORP.
1500 Cardinal Drive
Little Falls, NJ 07424

DTRO Forecasting System

PDP-11 Operating System: RSTS, RSX

Keywords: • Distribution • Forecasting • Manufacturing
• Sales analysis

This system, written in COBOL or BASIC, makes forecasts based on the "exponential smoothing" method, a type of weighted averaging, and features:

- Initial forecasts and associated factors created by a program that places them directly on file

1234 Sales and Marketing

- Running the initializing program as a simulation or a test, during which optional graphs and other printed output may be produced, or as a production run to update files
- Periodic updating as new data becomes available
- Special computation for slow-moving, seasonal, and trending items
- Demand filter and tracking signal calculations
- Specifying either full printout or exception output
- Measurement of outside factors

The approach has been tested on more than 900,000 items in five major firms, with proven accuracy. The Forecasting System is fully documented, with full support available for installation, training, consulting, and customizing. The purchase price includes 100 hours of support or customizing.

A version of this product is available for VAX computers.

Price: \$5000

Contact: Bill Benton

(415) 861-5454

DTRO SOFTWARE

1229 7th Avenue

San Francisco, CA 94122

Flexware Sales Analysis

PDP-11 Operating System: p-System™

PRO Operating System: p-System™, XENIX™

Keywords: • Sales analysis

Memory required: 256K RAM.

Flexware Sales Analysis reports include sales by product and product category, sales by customer, sales by salesperson, sales by customer by product, sales by customer by product type, and commission analysis. The Flexware Query Processor and the Flexware Report Writer allow the system user to quickly and easily create reports and answer questions. Flexware Sales Analysis is included in the Flexware Accounts Receivable and Flexware Order Processing systems.

This system can be quickly and easily customized to your individual requirements and international standards; provides a true multiuser capability, with file and record locking; has a built-in, flexible data base; automatically handles multiple companies and departmental accounting; provides a user-friendly report writer and query processor, extensive on-line help, a graphics option, and windows; provides complete control over sensitive corporate data; and runs on most hardware.

p-System™ is a trademark of Pecan Systems, Inc. XENIX™ is a trademark of Microsoft Corporation.

Price: Available upon request

Contact: Denise Ause

(818) 961-0237

MICROFINANCIAL CORP.
15404 E. Valley Boulevard
Industry, CA 91746

FUTURETECH — Mail Order Processing System

PDP-11 Operating System: RSX

Keywords: • Inventory • List processing • Order processing

This complete processing system for companies in the mail-order industry is written in COBOL 74. The 13-module system provides on-line tracking of orders from original entry through return of goods for refund or exchange. Inventory levels are updated in real time and are committed to orders at the time of entry. Customer credit is checked at order entry and again before shipping goods. Other features are automatic creation and release of back orders, processing of debit and credit memos, automatic calculation of taxes and freight charges, and compliance with FTC notification requirements. Important features are marketing and merchandising reports and reports for the accounting and finance departments, facilitating growth in order volume without requiring comparable growth in personnel.

Complete implementation support includes technical and user training, system and user documentation, program source code, and a 1-year warranty. Up to three months of installation and training time is included. Thereafter, a choice of maintenance agreements can be arranged.

This system is recommended for companies handling 40,000 to 1 million orders annually. Free demonstrations can be arranged.

A version of this product is available for VAX computers.

Price: \$25,000 – \$80,000

Contact: Robert J. Gaudet

(617) 893-2270

LESIFCO, INC.

80 Trapelo Road

Waltham, MA 02154

Impact

PDP-11 Operating System: Micro/R SX, RSX

Keywords: • List processing • Scheduling

Memory required: 32KW.

This prospect-tracking and follow-up system, written in COBOL, enables salespeople to effectively handle large numbers of prospects. It provides immediate access to complete prospect data, automatic follow-up cards to trigger sales calls, sales management information, marketing support services, and more effective and efficient coverage of valuable sales leads. In addition to its sales support function, Impact provides general list maintenance and mailing capabilities, a centralized calendar for scheduling demonstrations and conference room and meeting facilities, and user-defined demographic data analysis.

1236 Sales and Marketing

A version of this product is available for VAX computers.

Price: \$1000 – \$2500

Contact: Steven I. Hirschfeld
(201) 340-9893

BUSINESS CONTROLS CORP.

3-7 West First Street
Clifton, NJ 07011

Marketab®

PDP-11 Operating System: ULTRIX-11

Keywords: • Data collection • Forms management
• Sales analysis • Statistics

Marketab facilitates fast, accurate, and systematic processing of questionnaires and other survey data and is used by the market research industry, advertising agencies, financial institutions, and tabulation service bureaus. Marketab's three principal phases with supporting utilities cover every aspect of the processing of survey data, from the initial editing of raw data, through any required adjustments, to the final tabular printouts.

Marketab can process any data file, including multipunched (column binary) data. Comprehensive editing eliminates inaccuracies. Final tabulations are formatted to meet management requirements. Because tabulating can be done on an in-house basis, security is ensured. The tab system produces table and page numbers, plus a complete table of contents. Survey tabulations from multiple-wave studies may be combined into a single report without retabulation. Market tabulations are formatted for ease of reference.

A version of this product is available for VAX computers.

Price: \$40,000 – \$50,000

Contact: Harold Zawadski
(203) 853-7511

MNEMONICS, INC.

280 Connecticut Avenue
Norwalk, CT 06854

Marketing Strategy Simulation for Minicomputers

PDP-11 Operating System: RSTS, RSX

Keywords: • Automotive • Decision support
• Modeling/simulation • Presentation aids

Memory required: 16K.

These programs provide a competitive marketing situation for up to five teams (companies) for each industry. Each company makes product, pricing, advertising, distribution, production, and marketing research decisions for three types of automobile. The programs load parameters, receive decisions, update history, determine market shares, and generate financial statements and instructor summaries.

The simulation may be run for 20 consecutive quarters. DECUS number 11-425.

Note: Minor modifications may be needed in data file protection schemes.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

MBS SA (Manus Business Systems Sales Analysis)

PDP-11 Operating System: CTS-300, RSTS, RT-11

Keywords: • Decision support • Financial analysis
• Sales analysis

The MBS Sales Analysis module provides reports to aid in the evaluation of individual customer, customer groups, territories, salespeople, and product sales activity. Reports on percent profit and profit dollars can be used by management to make decisions about marketing strategies for various product categories.

Used as a management tool, the Sales Analysis module produces information to detect complex sales trends (thus providing a basis for determining competitive activity), to perform market-share analysis, and to improve the efficiency of sales personnel. In addition, product activity information can be obtained by product classification for a specified demand period. Depending on the amount of historical data available on the demand-period increments, the sales analysis information can help reduce inventory levels that increase stock turnaround. A current and prior year-to-date history file is used for producing reports.

The Sales Analysis module captures and accumulates sales history data as a result of invoicing in the MBS Order Processing module. The module also recaps pertinent activity of the MBS Sales Accounting subsystem.

A version of this product is available for VAX computers.

Price: \$3000 - \$6000

Contact: Gary Vowels
(206) 325-2200

MANUS SERVICES CORP.
1130 Rainier Avenue South
Seattle, WA 98144

NMI Customer Profile Package

PDP-11 Operating System: RSTS, XENIX™

Keywords: • Manufacturing • Order processing • Scheduling
Memory required: 256K.

The NMI Customer Profile Package, written in C and Business BASIC III, is designed for use by manufacturers' sales representative firms. The system uses the records of principals, salespersons, and customers. The principal's records section stores basic information about each principal represented by the firm, as well as specific information about

commission calculations. The salesperson's records section contains sales history and expense figures for each salesperson, as well as commission calculation information. Each salesperson can schedule his or her own itinerary, using the many call-planning functions included in the package. The customer's records section brings the principal and salesperson records together in each customer record. The customer record contains basic information about each customer, open- and closed-order data, a complete activity chart, and shipping volume history for three years. The Customer Profile Package also offers an extensive menu of system reports.

XENIX™ is a trademark of Microsoft Corporation.

Price: \$795

Contact: Angus Murphy
(215) 822-2407
NORTON-MURPHY INTERNATIONAL, INC.
176 Chalfont Road
Chalfont, PA 18914

Order Entry Processing

PDP-11 Operating System: RSX

Keywords: • Order processing

This software for tracking sales orders, backlog, and sales activity may be operated independently or as part of an integrated package that includes accounts receivable, accounts payable, general ledger, payroll, job cost accounting, and inventory control. The program provides fully interactive processing; table-driven input data specifications, allowing you to decide what data to maintain for each sales order and each line item; table-driven reports with user-specified format and contents; and full integration with accounts receivable so that orders are automatically marked shipped and backlog is automatically reduced when invoicing is done.

A version of this product is available for VAX computers.

Price: \$4000 +

Contact: Janna McMillan
(617) 275-5810
BREUER & CO.
54 Middlesex Turnpike
Bedford, MA 01730

Order Processing for Mailing List Rental

PDP-11 Operating System: RT-11, TSX-PLUS™

Keywords: • List processing • Order processing
• Sales analysis • Wholesale

This program handles brokered (sold directly to end users), wholesale, and managed lists (purchased directly from the list owner). Orders are entered with purchase order data. The complete order history for the list order is displayed, providing usage control (managed lists) and the

information to omit previous orders on repeated usage of a list. Purchase orders are generated. After invoicing, payables and receivables are posted to standard receivable and payable packages. Reports showing list rental activity for the list owners by mailing list and by mailer (end user) are generated. A purchase order log, an invoicing log, and a sales analysis by list category are also provided.

The program is intended primarily for small to medium-size companies that rent mailing lists but do not run them off internally. However, source is available, and the package can be modified for larger companies that want to combine the package with their list production.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$6000 - \$12,000

Contact: Bernard Littman
(213) 222-6670

BERNARD LITTMAN & ASSOCIATES
3889 West Point Drive
Los Angeles, CA 90065

Perspective/700 Sales Analysis

PDP-11 Operating System: RSTS

Keywords: • Sales analysis

Perspective/700 Sales Analysis reports highlight the most profitable products, your best customers, and the best sales representatives:

- The Customer Sales Analysis report includes month, year, previous-year comparison, and gross margin.
- The product Class Sales Analysis covers month and year-to-date comparison, unit and gross sales, and gross margin.
- The Salesperson Sales Analysis reports on product class; month, year-to-date; previous year and quota comparison; and gross margin.
- The Sales Territory Recap provides a salesperson summary; product class; month, year-to-date, previous year and quota comparison, and gross margin.
- The Item Sales History shows 12 months of rolling history, unit sales, and sales ranked by sales volume.

A version of this product is available for VAX computers.

Price: \$2000 - \$5000

Contact: Michael B. Andelman, President
(312) 953-2220

LIOCS CORP.
246 E. Janata Boulevard
Lombard, IL 60148

PRO-IV Sales Analysis

PDP-11 Operating System: Micro/RSTS, Micro/R SX, RSTS, RSX

PRO Operating System: P/OS

Keywords: • Accounting • Sales analysis

1240 Sales and Marketing

This module lets you review and analyze critical sales information, such as sales and profitability by customer, item, product category, or salesperson. Written in PRO-IV, a powerful and easy-to-use fourth-generation language, this application makes critical sales data instantly accessible. You can see profitability by item or product category or profitability by customer in gross amounts and percentages. You can track sales commissions earned or paid on a month- or year-to-date basis. Multiple selection options let you limit the output of each report to relevant information. For example, the Detailed Sales Analysis Report can be produced in detailed or summary form in any combination of salesperson, customer type, account number range, item category, item code range, or invoice date range. The Detailed Item Activity Report can deliver information in any combination of vendor type, vendor category, discounts, commissions, and item code sequences.

A version of this product is available for VAX computers.

Price: \$525 - \$11,250

Contact: Craig Thompson
(714) 951-8171

APPLICATIONS SYSTEMS CORP.
23181 Verdugo Drive, Suite 101
Laguna Hills, CA 92653

PROS (Prospect, Letter, and Sales Facility)

PDP-11 Operating System: RSTS

Keywords: • Data base management • List processing
• Office systems • Sales analysis

This software package includes data entry for letter, prospect, and sales information and data base inquiry and maintenance. PROS also generates personalized letters, customized labels, and comprehensive reports. This package requires the following "SYSGEN" parameters: alphabetic month and a minimum of two pseudokeyboards.

PROS is designed for high efficiency and ease of use for the small business, corporate division, or institution. Using this facility for mailing and storing prospect/customer correspondence greatly enhances sales efficiency.

A version of this product is available for VAX computers.

Price: \$8000

Contact: Carolyn Clyde
(801) 224-5306

CLYDE DIGITAL SYSTEMS, INC.
P.O. Box 4500
Provo, UT 84603-4500

S/A (Sales Analysis)**PDP-11 Operating System:** RSTS**Keywords:** • Financial analysis • Sales analysis

This system, closely integrated with Data Key's Accounts Receivable system, relies on the A/R sales document entries for its detail. Revenue can be analyzed, using product codes, branch numbers, salesperson numbers, customer numbers, and combinations of numbers. The corresponding costs (or units sold) can be maintained so that gross-margin calculations can be illustrated on the reports. The option to retain budget data is also provided so that comparisons to the figures can be given with various calculations. For example, reports include an analysis by product or product group, analysis by salesperson by product, and analysis by branch. In addition, a product sales journal lists the revenue detail.

Price: \$2500**Contact:** Marvin Gogal, Branch Manager
(403) 464-7121

DATA KEY LTD.

2107 - 87 Avenue

Edmonton, Alberta T6P 1L5 Canada

Sales Analysis**PDP-11 Operating System:** ULTRIX-11**Keywords:** • Report writer • Sales analysis

This fully integrated, on-line, multiuser, UNIX*-based sales analysis system allows reports to be prepared in either detail or summary form, based on orders, shipments, invoices, or cash receipts. Reports are available by part number, product category, customer, customer type, state, region, ZIP code, and salesperson. Cross-reference files by customer, vendor, product, account, and document allow most reports to be run without having to sort. Reports prompt for a range of fields, so individuals or groups of customers or products can be printed. Reports can compare the actual amount against the budgeted amount for sales, orders, cash receipts, and so on. Future orders can be entered, and revenue forecasting reports can be generated. Commissions can be calculated at the time of order, invoice, or cash receipt. Calculated commissions can be posted automatically to either A/P or payroll systems.

Also available are a print key providing hard copy of any screen image, true multiuser design for concurrent program use, built-in multicompany/multidivision support, and a user-assigned predefined company/division or option to specify company/division. Timely information is ensured through the automatic updating of G/L from all modules.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Laurel McDaniel
(312) 332-3242

NEAL NELSON & ASSOCIATES

185 N. Wabash, Suite 1908
Chicago, IL 60601

Sales Lead Analysis

PDP-11 Operating System: Micro/RSTS

Keywords: • Advertising/promotion • Decision support
• Point of sale • Sales analysis

This system, written in DIBOL 83, analyzes the effectiveness of investment in various advertising media, in generating sales leads and sales closings, and of the advertising:

- Media Source Analysis targets the most profitable investments by showing where and when advertising generates leads and sales.
- Closed Leads Analysis interprets sales by source, region, and salesperson, providing information on where, when, and how your company's service or product groups sell best.

Price: \$675

Contact: Margaret Hodder
(617) 484-1709

CORPORATE CONSULTING CO.

556 Trapelo Road
Belmont, MA 02178

Sales Management and Mailing List

PDP-11 Operating System: Micro/RSTS, Micro/RSX, RSTS, RSX

Keywords: • List processing

This system allows for the entry and maintenance of prospective customers. Prospects can be coded into categories, with sales information associated with the categories. A generic retrieval and verification process aids against entering duplicate names. Salesperson activity and history with a prospect can be entered and maintained. Numerous sales management reports aid the sales department in following up leads, evaluating types of promotion, and projecting sales. A flexible routine allows for the printing of mailing labels.

A version of this product is available for VAX computers.

Price: \$1175 - \$1300

Contact: William Ferris
(203) 735-1819

COMPUTER SOFTWARE ASSOCIATES

366 Main Street, P.O. Box 492
Ansonia, CT 06401

Sales Prospect Data Base

PDP-11 Operating System: RSTS, RT-11

Keywords: • Data base management • List processing
• Sales analysis • Telecommunications

This software allows users to make inquiries or to update an on-line data base in a multiuser environment. The data base informs salespersons engaging in telephone sales about any prospect on file.

The data base is indexed by two major keys that allow either key to act as a subkey for the other. Detailed data can be retrieved by matching leading substrings in the clients' names. Data base records consist of string fields so that any type of information can be maintained. One set of fields is interpreted by a mailing label program as a list of sales contacts.

Price: \$2495

Contact: David M. Perlman
(612) 546-2364

D P COMPUTER SYSTEMS
8708 Hopewood Avenue
Minneapolis, MN 55427

SEARCH/PURGE — Mailing List Deduplication Program

PDP-11 Operating System: RSX

Keywords: • Forms management • Information management
• List processing • Office systems

This BASIC program eliminates duplicates in a premerged and sorted mailing file. The program uses a unique detection method to identify duplicates without increasing the overkill factor. The input file is sequentially purged of duplicates, resulting in an output file of unique names and a file containing all sets of duplicates. A third output file contains results of the operation, including input count and a matrix summarizing duplicates by "list key."

The format for the input file is flexible, since the user specifies the column locations for name, address, mailing zone (Zip), and list code identifier. Data fields displayed in the report of duplicates are specified in the same manner. The format of the output file of unique names is identical to that of the input format.

SEARCH/PURGE provides clear, easy-to-follow documentation and operator instruction. The price includes installation assistance, with 30 days of maintenance support.

Depending on mailing activity, savings from the use of SEARCH/PURGE can rapidly pay back the initial investments. For example, eliminating 5% of the duplicates from a 30¢ self-mailer of 100,000 pieces will save \$1500.

A free trial test run can be arranged for a list of up to approximately 50,000 names.

A version of this product is available for VAX computers.

Price: \$5000 - \$7500

Contact: Robert J. Gaudet
(617) 893-2270
LESIFCO, INC.
80 Trapelo Road
Waltham, MA 02154

Wholesale Lumber Management

PDP-11 Operating System: CTS-300, RT-11

PRO Operating System: RT-11, TSX-11

Keywords: • Accounting • Inventory • Order processing
• Wholesale

The system, written in DIBOL, provides lumber management with the necessary information to direct and control their business. The package offers inventory control, order entry, accounts receivable, accounts payable, and purchase order control.

Price: \$3500 - \$15,000

Contact: Jim Chaffeur
(206) 581-3262

MBA COMPUTER SERVICES, INC.
3819 100th Street, SW
Tacoma, WA 98499

Service Industries



Robert Pyle

Abax Rental Management System

PDP-11 Operating System: CTS-300, RSTS, RT-11, TSX-PLUS™

Keywords: • Accounts receivable • Inventory • Point of sale

This system for automating a wide variety of rental firms consists of accounts receivable, inventory control, and depreciation (other accounting applications are also available). The system can be used at the rental counter, in after-the-fact accounting of business activity, or both.

The system features contract entry, which uses reservations, messages, kits, volume discounts, and customer scanning by name or category. Pricing of both rental and sales items is accomplished through a unique system that allows up to six prices for each inventory item, based on time, quantity used, 1-time charge, or any other pricing unit required. The codes can be selected from an unlimited number built to define specific pricing needs. In addition to contracts, the system provides several useful management and accounting reports.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$9500 - \$13,500

Contact: Charles R. McKown, President
(316) 792-7318 or (800) 221-1265

ABAX COMPUTER SYSTEMS
625 Washington Street, P.O. Box 1349
Great Bend, KS 67530

ABC/Equipment Data and Repair History System

PDP-11 Operating System: Micro/RSTS, Micro/R SX, RSTS, RSX

Keywords: • Cost accounting • Property maintenance

This system, written in COBOL, is used in manufacturing, processing, utility and industrial plants, public works, schools, hospitals, and service businesses. The on-line system works equally well on mainframes, minis, micros, and time-share systems. The system facilitates planning and repair work by showing the nameplate data of the equipment, the cost and time for repair labor, the spare parts required, and the cause of failure. Historical information necessary to upgrade all types of equipment through failure analysis is provided. The equipment data card is available on line on a CRT or in printed form, showing the nameplate data, the operating characteristics, the spare parts, the stock numbers, and the interchangeability of an item. The equipment history record is available on a CRT or on a printout, showing a complete repair history for each piece of equipment, the dates of repairs, the work-order numbers, the priority, and the reason for failure.

A version of this product is available for VAX computers.

Price: \$11,000

Contact: V. W. Ruskin
(604) 682-3808

ABC MANAGEMENT SYSTEMS INC.

805 Dupont Street, Suite 3
Bellingham, WA 98225

CHRIS (CISCO Hotel and Resort Information Systems)**PDP-11 Operating System:** Micro/RSTS, RSTS**Keywords:** • Arts and leisure • Property management

CHRIS is a fully integrated reservations, front-desk, back-office, property owner, rental owner, and accounting system. The modules can be either installed and purchased independently or interfaced with one another as they are brought on line. CHRIS, written in BASIC-PLUS-2, also offers central reservations programs, which are the foundation for all CISCO reservations systems. These programs apply to multiproperty hotel chains and resort areas, with emphasis on cooperative marketing. Each central reservations system also allows for travel agent, statistical reporting, marketing, and commission invoicing.

Price: \$10,500 - \$80,000**Contact:** Barbara Murray or Cindy Gilbert
(303) 949-4736CISCO (COMPUTER INFORMATION SYSTEMS CO.,
INC.)

P.O. Box 1328

Vail, CO 81658

COLOR (Color Consultants Information System)**PDP-11 Operating System:** RT-11**Keywords:** • Decision support • Query facilities
• Sales and marketing • Textiles/clothing

This package consists of self-administered questionnaires and prompts for a beautician analyzing a client's personality, lifestyle, color preferences, and personal dimensions. The output consists of wardrobe suggestions and beauty recommendations, as well as descriptive client files for follow-up services. Additional modules include wardrobe inventory, clothing purchase plan, and records of the individual's color palette and textural preferences.

Programs are written in FORTRAN IV. Two double-density RX02 disks are required.

Decision rules can be updated to accommodate changing fashions and to include an individual beautician's personal recommendations.

Price: \$350 - \$400**Contact:** David Bradwell, Ph.D., President
(415) 479-4980

DAVID BRADWELL AND ASSOCIATES, INC.

Economic Consultants

880 Las Gallinas Avenue

San Rafael, CA 94903

Court Club Management System

PDP-11 Operating System: CTS-300, Micro/RXS, RSTS, RT-11

Keywords: • Arts and leisure • Inventory • Scheduling

This system for multipurpose sports facilities, written in DIBOL, consists of modules for membership accounting, contract management, electronic funds transfer, general ledger, accounts payable, payroll, pro shop inventory, and tournament scheduling. Other key features are front-desk verification, multiple-club capability, and magnetic stripe and bar code readers.

This product can be run on the A-to-Z Integrated System.

A version of this product is available for VAX computers.

Price: \$5000 - \$8000

Contact: Rhonda Goff

(602) 293-2444

BETADATA SYSTEMS, INC.

4100 N. First Avenue

Tucson, AZ 85719

Culinary Operations Information System

PDP-11 Operating System: ULTRIX-11, XENIX™

Keywords: • Information management • Inventory
• Warehousing

This software, designed for the multiunit food service operation, provides inventory control over a central purchasing commissary and various outlets in its network. Various food service operations and lounges with many types of food can be accommodated. The system reports by location and by type of business. The reporting period can be defined to the period of operation — one week, one month, one quarter, one year. A user's guide and documentation are included.

XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: \$6500

Contact: Bob Ginn

(901) 767-3759

INDUSTRY SOFTWARE SALES, INC.

P.O. Box 240804

Memphis, TN 38124

Dispatch

PDP-11 Operating System: CTS-300, RSTS

Keywords: • Information management

This simple-to-operate, menu-driven system handles many of the time-consuming tasks of a field service organization. The system handles service calls from the initial service request through call close-out.

Dispatch allows the dispatcher to retrieve client and machine information, record a service request, and dispatch a field engineer within minutes of taking the call. Additional features include the updating of parts inventory, tracking receivables, and issuing invoices.

Dispatch can be customized. Many components of the system are, however, applicable to any service business.

A version of this product is available for VAX computers.

Price: \$20,000 – \$150,000

Contact: Robert Brooks

(603) 898-7000

ASA INC.

3 Speen Street

Framingham, MA 01701

HIMS (Hospitality Information Management System)

PDP-11 Operating System: RSTS

Keywords: • Accounts payable • Cost accounting • Inventory
• Sales analysis

This complete back-office inventory and accounting system is designed for a multilocation food service operation, either with or without a central commissary. HIMS provides for inventory control, tracking food and supply items from initial receiving through any processing, shipment to serving locations, and sale of the final product.

HIMS includes recipe explosion, automatic unit-of-measure conversion, sales analysis, gross profit analysis, picking lists, inventory adjustments, physical inventory variance reporting, and month-end summary. Costing can be done on either a last-cost or weighted-average basis. The HIMS system can be modified to poll POS cash registers.

HIMS uses single entry of documents to reduce paper handling. When an invoice is entered, for example, the inventory quantity is updated, the unit cost of the item is updated, and the invoice is set up for payment.

Optionally available interfaced modules include forecasting, accounts payable, general ledger, payroll, and accounts receivable.

Price: \$7000 – \$12,000

Contact: John E. Charles, Manager of Systems Consulting

(804) 649-0351

GARY, STOSCH, WALLS & CO., CPAs

700 E. Main Building, Suite 1700

Richmond, VA 23219

Hospitality Management System

PDP-11 Operating System: RSTS, RT-11

Keywords: • Accounting • Arts and leisure
• Information management • Payroll

1250 Service Industries

This system, written in DIBOL, handles integrated reservations, guest accounting, and back-office accounting for the hospitality industry. The system provides security and an audit trail of all information, as well as comprehensive management reports to help manage hotel operations.

The front-desk guest accounting features individual and group reservations, guest checkin and checkout, guest and room status, guest history, advance deposits, and package plans. The back-office accounting features accounts payable, a call accounting interface, a point-of-sale interface, hospitality general ledger, city ledger receivables, a night audit, travel agent accounting, hospitality payroll, cashier, and housekeeping.

A version of this product is available for VAX computers.

Price: \$10,000 - \$25,000

Contact: Gary L. Bennett

(801) 484-4496

COMPUSOLV

391 Ironwood Drive

Salt Lake City, UT 84115

Innkeepers Management System

PDP-11 Operating System: Micro/RSX, RSX

Keywords: • Arts and leisure • Financial management

• Property management • Sales analysis

This complete front-office and back-office system for hotels, resorts, or condominiums is easy to use and flexible. The front-office system includes reservations (individual/group), registration and checkin, front-desk operations, cashiering, night audit, management reports, housekeeping management, guest look-up and wake-call reporting, sales and marketing analysis, guest history, public facilities and services scheduling, deposit accounting, guest ledger, city ledger and billing, travel agent accounting, package management and accounting interfaces to point-of-sale posting machines and HOBIC or telephone call accounting systems, and an executive policy function that allows the property to custom tailor the system to its specific operation. The multicompartment-oriented back-office system includes general ledger and financial reporting, accounts payable, payroll, an optional accounts receivable system for receivables not carried on the front-office city ledger, and other optional modules for inventory control, fixed-asset accounting, and job cost accounting.

Optional integrated subsystems are available to perform telephone call accounting without the need for an independent telephone call accounting system and to perform the point-of-sale function without the need for expensive point-of-sale cash registers. Also, an integrated subsystem for central reservations is available for companies with multiple properties.

Special features for condominiums include reservation fair-rotation to ensure that business is spread evenly among all owners, variable management fees by unit, automatic posting to owners' accounts and preparation of owners' statements, and special housekeeping reports that highlight back-to-back occupancy.

Turnkey system packages are available for any size property and for multiple properties.

Program updates are available over the telephone through computer-to-computer communications.

Price: \$10,000 – \$30,000

Contact: Sales Department
(805) 255-3552

KNOX DATA, INC.
23030 Lyons Avenue
Newhall, CA 91321

Job Shop Management

PDP-11 Operating System: RT-11, TSX-PLUS™

Keywords: • Accounting • Inventory • Sales analysis
• Shop floor control

This package, designed for any business that needs to track inventory, job costs, sales orders, and purchase orders, provides full business-management functions, including accounts receivable, accounts payable, payroll, and general ledger. When a new order is entered with individual line-item prices, the billing process and job-cost mechanisms are initiated. Budget-to-actual and profit-percentage information is available, with detail by cost categories and cost budgets.

When stock transfers are initiated, the necessary inventory is automatically reserved to complete the job. The inventory cost is transferred specifically to each job. An update of inventory levels is automatic, and a record of all inventory transfers is maintained.

Purchase orders are generated either for a specific job or to replenish stock. The accounts payable is directly interfaced with the purchase order system to verify cost and receiving information. Discrepancies between purchase order amounts and invoiced amounts are flagged.

Partial billing is provided, as well as accounts receivable aging. Sales information by salesperson, customer, and product category is available. Commissions due, based on job cost versus sell price, are calculated when payment is received.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Dwight Johnson
(303) 574-8086

PROFESSIONAL COMPUTER SERVICES

2345 N. Academy Boulevard, Suite 209

Colorado Springs, CO 80909

Oil Burner Service/Inventory

PDP-11 Operating System: RSTS

Keywords: • Cost accounting • Inventory • Petroleum
• Property maintenance

This application software addresses the most demanding areas of burner service. From the moment the customer calls and a work order is requested, the system can track the progress of that work order until completion, ultimately producing multiline invoices showing (at the user's option) reasons for call, parts used, work done, prices, taxes and amount due, as well as special messages. The parts inventory aspect of the package keeps track of quantity, tracks costs, automatically prices the invoice, and excludes charges for parts and/or labor covered by service contracts. Although the information posted to the system is entered in abbreviated format (defined by the user), the system maintains a complete history of those calls in clear English on each account for several years. Management reports include Profit by Customer, Parts Usage by Mechanic, and Overall Department performance. Automatic cleaning tickets and contract renewals are also accommodated.

A version of this product is available for VAX computers.

Price: \$10,000 – \$20,000

Contact: Bruce A. Bott, President
(201) 584-4026

ADVANCED DIGITAL DATA, INC.

354 Route 206

Flanders, NJ 07836

PCO (Pest Control Operators Management System)

PDP-11 Operating System: RSX, RT-11

Keywords: • Accounting • Inventory • Sales and marketing
• Scheduling

PCO manages route and service activity, including route master, route planning, service scheduling, route sheets, route billing, service history, and other functions — billing, commissions, sales analysis, accounts receivable, accounts payable, purchasing, inventory control, general ledger, and financial reporting.

Price: \$6000 – \$9000

Contact: Harmon Houghton, President
(201) 348-6688

EXTENDED TECHNOLOGIES CORP.

1023 Boulevard East

Weehawken, NJ 07087

PICS (Parts Inventory Control System)

PDP-11 Operating System: RSX, RT-11

Keywords: • Inventory • Management • Materials handling
• Warehousing

This tool for controlling quantities of parts that can be used in equipment maintenance and repair provides reports of inventory, low-stock items, and low-stock items by vendor. The system also supports other useful functions.

A version of this product is available for VAX computers.

Price: \$3000 - \$5000

Contact: Ralph M. Flanders, President
(615) 966-6832

CUSTOM COMPUTER SOFTWARE, INC.
1108 Woodshire Drive
Knoxville, TN 37922

Rental Service System

PDP-11 Operating System: Micro/RSTS

Keywords: • Billing • Inventory • Property maintenance
• Scheduling

This system, written in DIBOL 83, is a complete delivery planning, billing, and accounting system for service industries needing to manage, maintain, and service off-site equipment rentals. This system provides for deliveries of items to the off-site businesses. Rental industries include vehicle equipment, uniform rental, vending machine servicing, and water and gas delivery businesses. The system provides once-a-month billing for off-site rentals and the daily deliveries. The system includes complete accounting and receivable management, delivery planning, and route maintenance.

Price: \$3875

Contact: Margaret Hodder
(617) 484-1709

CORPORATE CONSULTING CO.
556 Trapelo Road
Belmont, MA 02178

Resort Property Management

PDP-11 Operating System: RT-11

Keywords: • Accounting • Arts and leisure
• Property management

This system for the multioffice or single-office company provides monthly P and L for each office and consolidated accounting with prior-year and budget comparisons; accounts receivable; accounts payable with vendor 1099; payroll; and schedules for fixed assets, notes payable and receivable, and other schedules. Features include the handling of reservations, with such information as name and address of guest, description of desired unit, dates, guest services requested, and so

forth. In addition, deposit accounting, cash receipts, and cash disbursements with check-writing capabilities are included. An operation's statement shows in detail the activity on each property, the owner's year-to-date statement, the occupancy report for each property, the cash-flow analysis for each property, and the unit-availability tables for each property. Also included are complete records for all management services provided a guest, as well as a guest history file, which enables the management company to generate repeat business from a prior guest.

The UDS Resort Management System can be integrated with the UDS General Ledger Accounting package. All UDS systems are delivered with word processing capabilities.

Price: \$4800 - \$12,000

Contact: William P. Irwin, Jr.

(404) 724-7761 or (800) 241-2404

UNITED DATA SYSTEMS, INC.

501 Greene Street, Suite 220

Augusta, GA 30901

RIM (Relationship Impact Model)

PDP-11 Operating System: Micro/RSX, RSX

Keywords: • Health care • Information management
• Medical • Mental health

This computerized social service system provides for the needs of institutionalized children. RIM focuses on social service programming, which includes the tracking of client progress, measurement scales for treatment and supervision, a social service audit trail, a client tracking and profile system, behavioral reinforcers, and the integration of data received from all parts of the child's program. RIM provides information and reports on days of care, the school breakfast and lunch program, appointments, medications, work or vocational programs, individual and group contacts, support agency billing, child behavior and relationship tracking, and more.

The menu-driven system has full-screen fill-in-the-blank formats, operator prompts, and data verification. A help key displays information and instructions or refers the user to the user's manual.

This on-line, interactive, multiuser, user-friendly system is user definable and highly adaptable. RIM operates stand alone or with the RIM DONORS package. RIM can integrate with DIGITAL's A-to-Z software, which provides word processing, graphics, spreadsheet, data inquiry and reporting, electronic mail, and more. RIM also runs and integrates with the Digital Accounting System (DAS), which includes general ledger, accounts payable, accounts receivable, payroll, inventory control, and more.

A version of this product is available for VAX computers.

Price: \$12,500

Contact: Cal Towler or Robin Wood
(714) 628-1272

HILLVIEW ACRES CHILDREN'S HOME

3683 Chino Avenue
Chino, CA 91710

Timeshare Contract Management System

PDP-11 Operating System: RSTS

Keywords: • Arts and leisure • Financial management
• Sales and marketing

This system is designed to manage deposits, contracts, commissions, and sales performance information for companies that sell vacation timesharing. The system's functions include deposit accounting, sales contract processing, commission accounting, and cancellation processing. Deposit functions allow the entry of one or more deposits for each client prior to entry of the contract. Sales contract entry allows automatic retrieval of deposit information from the deposit file or direct entry of deposits received. All contract data is verified at contract entry against attribute files, financing algorithms, and policy information. The system differentiates between broker and company sales. Input of tax information, deductions from sales, and bonus weeks are provided, with appropriate accounting accommodated. All financing information, including processing fees, is verified, with erroneous contracts rejected. Salesperson and broker commissions are computed (up to six for each contract) and posted to the salesperson/broker file. A general ledger interface file is produced as a part of the update, with provisions for interfacing deposit accounts, sales accounts, accounts receivable, current and deferred commission, tax and deduction amounts, and forfeiture income by sales office. Contract cancellation provides for inputting refund information with computation of forfeiture income, adjustment to commissions earned, and appropriate general ledger entries.

Supporting files include salesperson/broker, type of sale, and office G/L account file. The date-driven system provides contract file listings, sales analysis by salesperson/broker, type of sale, and sales by sales office for any period of time. Commission records are maintained by salesperson, with 1099s provided at year end. Deposit accounting provides aged reports of deposits on file by client by any date periods.

The system is designed to interface with the Compu-Share general ledger system and uses the CSI screen-handling functions.

A version of this product is available for VAX computers.

Price: \$4000

Contact: William L. Dempsey
(702) 384-7641

SIMCO, INC.

801 S. Rancho Drive, Suite E2B

Las Vegas, NV 89106

Travel System 4/11

PDP-11 Operating System: RSTS, RSX

Keywords: • Arts and leisure • Scheduling • Transportation

This on-line reservation and management system serves tour, coach, and ferry operators, as well as travel companies. The system provides flexible program and inventory structuring, which includes package and individual tours, travel-only transactions, and an unlimited number of supplements. The system calculates profitability and the break-even point for each tour/journey. Statistical analysis for forecasting is also included. The on-line space checking covers cancellation and alteration of bookings. Documentation for travelers, hotels, airlines, and couriers is also produced. A data base of all customers and suppliers, with a number of analysis codes, is linked with the mailing list and word processor.

The system modules are inclusive tours, express shuttles and excursions, contract and charter operations, and vehicle management. The modules are fully integrated with the financial management programs, which consist of accounts receivable, accounts payable, general ledger, and payroll

A version of this product is available for VAX computers.

Price: \$4500 - \$40,000

Contact: H. B. H. Reporter, Managing Director

021-355 3511 or Telex: 335797 FOURTH G

FOURTH DIMENSION PRODUCTS LTD.

Fourth Dimension Building, 10 King Edward Square

Sutton Coldfield, West Midlands B73 6AP United Kingdom

Vehicle Cost and PM

PDP-11 Operating System: CTS-300

Keywords: • Automotive • Cost accounting
• Property maintenance • Scheduling

This comprehensive free-standing module of programs informs the user when vehicles are due for scheduled maintenance and captures costs by repair codes and by vehicle. The system's four files are Vehicle Master, containing all pertinent information about the vehicle; Repair Master, containing the repair function and the charge category; Preventive Maintenance Master, which determines the repair functions to be performed on the vehicle at coded mileage intervals; and Repair History, which holds cost information by vehicle by repair code. Mileage costs are also calculated by repair code and by vehicle.

Maintenance transactions are entered by vehicle and repair category on a CRT as repair functions are performed. The transactions include the cost expended, hours expended (if applicable), and the odometer

reading when the function was performed. When all maintenance transactions have been entered and balanced, the master files are updated. The Vehicle Master is updated with the cost by category (parts, labor, other) and the current odometer reading. The Preventive Maintenance Master is updated with the odometer reading when the function was done. The repair history is updated with the cost by vehicle by repair category.

A Vehicle Maintenance-Due Report lists the vehicle and the repair function to be performed. The next time that the function should be performed is calculated, based on the mileage at the last repair and the repair interval. The function will be flagged if the odometer reading of the next scheduled repair is less than the current odometer reading.

A History by Vehicle Report shows year-to-date and total-to-date costs and mileage costs by repair code, by vehicle. A summary is printed by repair code, showing cost and cost for each mile. A History by Cost Code Report shows year-to-date and total-to-date cost by vehicle and repair code.

Price: \$1500 – \$2000

Contact: Robert J. Steinis
(203) 378-6010

FOOD DISTRIBUTOR SYSTEMS, INC.
959 Main Street
Stratford, CT 06497

Work Order Record System

PRO Operating System: P/OS

Keywords: • Property maintenance

This maintenance department work order record system provides labor/material cost information by work order, location, craft, program, and priority. DECUS number PRO-118.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

Systems Communications



Robert Pyle

3277 Display Emulator for RSTS/E

PDP-11 Operating System: RSTS

Keywords: • Modeling/simulation • Networking

Memory required: 248KB minimum.

This emulator allows a RSTS/E user to access CICS/VS, IMS/VS, and TSO on an IBM System/370 from a DIGITAL video terminal. The emulator uses existing VT100 or VT52 keys to perform the same tasks as the IBM 3277 program function keys. If the DIGITAL user is using a VT100 with the Advanced Video Option, the screen will perform reverse video highlighting on protected fields. Features include upper- and lowercase, 24 program function keys, 3 program access keys, tab and back tab, and 4-directional cursor positioning.

The RSTS/E 3277 Display Emulator implements an optional log file that traces and records incoming messages from the IBM system. The emulator can be temporarily suspended while the DIGITAL user switches back to the RSTS/E monitor. Later, the DIGITAL user can reenter the IBM application at the same point where it had been suspended.

The file created with any RSTS/E editor can be transmitted to the IBM system as though it were being entered on an IBM 3277 Display Station.

The RSTS/E 3277 Display Emulator operates through DECnet/E with Network Command Terminal support. DECUS number 11-330.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

3780 COMBOARD™

PDP-11 Operating System: RSTS, RSX

Keywords: • Device drivers/handlers • Modeling/simulation
• Pre- and postprocessors

COMBOARD, a front-end data communications processor that plugs into the PDP-11 UNIBUS, is a hex-height module using a 16-bit microprocessor. Software is 3780 protocol and has interfacing utilities for RSTS/E, RSX-11M/M+, and VMS. A device driver is also included. A 3780 protocol emulator runs directly on the COMBOARD, and all other I/O software runs in the DIGITAL host. The price includes source code for all software except the emulator. Quantity discounts are available.

A version of this product is available for VAX computers.

Price: \$9800 - \$21,900

Contact: Bill Martin

(800) 772-3282

SOFTWARE RESULTS CORP.

2887 Silver Drive

Columbus, OH 43211-1081

A-to-Z Document Transfer (DECdx)**PDP-11 Operating System:** Micro/RSX**Keywords:** • A-to-Z • File transfer • Office systems

This layered software product, which resides on an A-to-Z host system, enables DECmate II/III systems and the host to be linked for better system utilization, document exchange, and information and data sharing.

DECmate users can use A-to-Z Document Transfer to transfer documents between the DECmate system and the A-to-Z host over a serial line interface. The WPS word processing document formats and print control characters are retained. During an A-to-Z Document Transfer session, the DECmate system operates as though it were another terminal on the host system.

Communication between the DECmate and A-to-Z systems uses the DIGITAL Standard Document Exchange (DX) error-detecting and error-correcting protocol and file format.

A-to-Z Integrated System (Base Kit) and DECmate/WPS, with communications software activated, are prerequisite.

Refer to SPD #18.31.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$400**Contact:** Consult your local DIGITAL sales office (see Introduction).**ACCES Network Virtual Terminal Service****PDP-11 Operating System:** RSX, ULTRIX-11**Keywords:** • Networking • Telecommunications

This network virtual terminal service for heterogeneous systems supports multiple, concurrent, and logical sessions established with DIGITAL and other hosts connected to local and internetworks. A Courier presentation-layer protocol interface is required, available through ACC's ACCES Network Protocol Package.

Price is for binary; source is available.

A version of this product is available for VAX computers.

Price: \$1000**Contact:** ACC

(805) 963-9431

ACC

720 Santa Barbara Street

Santa Barbara, CA 93101

ACCES NPP (Network Protocol Package)**PDP-11 Operating System:** RSX, ULTRIX-11**Keywords:** • File transfer • Networking • Telecommunications

NPP implements industry-standard protocols that correspond to the Open System Interconnection (OSI) Reference Model layers 3, 4, 5, and

6, with an emphasis on distributed processing features and functions in a multivendor, multi-operating system environment. The ACCES NPP provides a communication path between user applications or network utilities and the device driver of most commercially available network controllers for such networks as Ethernet X.25 and HDLC-based broadband networks. Two implementation options are available: TCP/IP, with the Courier protocol at the presentation layer, or the full XNS protocols, including Courier, SPP, IDP, and Error.

The key feature of ACCES NPP is the full implementation of the Courier protocol, which is designed for distributed processing environments. An applications programmer need not be concerned with network configurations, routing, flow control, or packetization but instead can view the network as a pool of resources that are manipulated with simple remote procedure calls. ACCES NPP also offers system programmers and designers a highly structured programming environment in which lower levels of network operation can be accessed. Network management functions are provided as a part of the standard package.

This package is useful to network design engineers responsible for the network and communication architecture of product lines or to system managers responsible for interconnecting processing resources.

The ACCES Network File Management Service and the ACCES Network Virtual Terminal Service are two network utilities available for use with the ACCES Network Protocol Package.

Sources are available.

A version of this product is available for VAX computers.

Price: \$2500

Contact: ACC

(805) 963-9431

ACC

720 Santa Barbara Street

Santa Barbara, CA 93101

Access/BSC 3270

PDP-11 Operating System: CTS-300, Idris™, Micro/RSTS,
Micro/RSX, RSTS, RSX, RT-11,
ULTRIX-11

PRO Operating System: Idris™, XENIX™

Keywords: • Down-line loading • File transfer • Networking
• Office systems

Memory required: 128K.

This software emulates IBM's BSC 3270 cluster controller products and provides a level of capability similar to that of the IBM 3274 with BSC communication. The software, written in C, is designed to be run on personal computers, multiuser computer systems, local area network servers, and a wide variety of other system configurations.

Access/BSC 3270 supports both single- and multiuser environments. Each user can be supported by one or more display stations that emulate IBM's 3278 Model 2 or 3279 Model 2A displays, as well as printers equivalent to IBM's 3287 Model 1 printer.

Idris™ is a trademark of Whitesmiths, Ltd. XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Steve Martinez
(408) 725-1568

COMMUNICATIONS SOLUTIONS, INC.
992 S. Saratoga-Sunnyvale Road
San Jose, CA 95129

Access/DIA

PDP-11 Operating System: Micro/RSTS, Micro/RXS, RSTS, RSX, RT-11, ULTRIX-11

PRO Operating System: Idris™, XENIX™

Keywords: • Down-line loading • File transfer • Networking
• Office systems

Memory required: 128K.

This portable software emulation of IBM's Document Interchange Architecture (DIA) allows products to interface with IBM office automation products, such as Distributed Office Support System (DISOSS). Access/DIA provides a high-level interface to an application program. The application program initiates document distribution and retrieval and accesses DISOSS-based document libraries through Access/DIA, which handles all of the DIA command and protocol processing.

Access/DIA is designed to be used with Communications Solutions' Access/SNA APPC software, which provides the SNA Logical Unit Type 6.2 transport protocols used by most of IBM's new office automation products.

Idris™ is a trademark of Whitesmiths, Ltd. XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Steve Martinez
(408) 725-1568

COMMUNICATIONS SOLUTIONS, INC.
992 S. Saratoga-Sunnyvale Road
San Jose, CA 95129

Access/SNA 3270

PDP-11 Operating System: CTS-300, Micro/RSTS, Micro/RXS,
RSTS, RSX, RT-11, ULTRIX-11

PRO Operating System: Idris™, XENIX™

Keywords: • Down-line loading • File transfer • Networking
• Office systems

Memory required: 128K.

This software, written in C, emulates an IBM 3274/3276 cluster controller. The program supports IBM Logical Unit Types 1, 2, and 3, providing access to host-based application subsystems, such as IMS/VS, CICS/VS, TSO, VM/CMS, and 3270 subsystems running in other processors, such as the IBM 8100 Information System.

Access/SNA 3270 emulates the IBM 3278 Model 2 and 3279 Model 2A display stations and the IBM 3287 Model 1 printer. This software supports 3270 Data Stream Compatibility (LU3) printers, SNA character string (LU1) printers, and host-driven remote printing and local copy functions.

Access/SNA 3270 is compatible with CSI's entire line of SNA products.

Idris™ is a trademark of Whitesmiths, Ltd. XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Steve Martinez
(408) 725-1568

COMMUNICATIONS SOLUTIONS, INC.

992 S. Saratoga-Sunnyvale Road
San Jose, CA 95129

Access/SNA 3770

PDP-11 Operating System: CTS-300, Micro/RSTS, Micro/RXS,
RSTS, RSX, RT-11, ULTRIX-11

PRO Operating System: Idris™, XENIX™

Keywords: • Down-line loading • File transfer • Networking
• Office systems

Memory required: 128K.

This software emulation of IBM's SNA 3770 Cluster Controller products provides a level of capability similar to that of the IBM 3777 Model 1 Remote Job Entry (RJE) workstation. Access/SNA 3770 is designed to be run on personal computers, multiuser computer systems, local area network servers, and a wide variety of other system configurations. Both single- and multiuser environments are supported. Each user has a full range of 3770 logical device support, including printer, punch, card reader, and console.

Access/SNA 3770 is compatible with CSI's entire line of SNA products.

Idris™ is a trademark of Whitesmiths, Ltd. XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Steve Martinez
(408) 725-1568

COMMUNICATIONS SOLUTIONS, INC.
992 S. Saratoga-Sunnyvale Road
San Jose, CA 95129

Access/SNA 5250

PDP-11 Operating System: CTS-300, Micro/RSTS, Micro/RSX,
RSTS, RSX, RT-11, ULTRIX-11

PRO Operating System: Idris™, XENIX™

Keywords: • Down-line loading • File transfer • Networking
• Office systems

Memory required: 128K.

This software emulation of IBM's SNA 5250 Terminal products provides a level of capability similar to that of the IBM 5250 Model 12 workstation. Access/SNA 5250 software allows workstation products to be attached to IBM System/34, System/36, and System/38 host computers. The software has a unique modular structure and is written in C, a powerful language that ensures easy portability. Access/SNA 5250 is designed to be run on personal computers, multiuser computer systems, local area network servers, and a wide variety of other system configurations.

Access/SNA 5250 supports both single- and multiuser environments, as well as such advanced features as disk transfers between workstation and host and a screen-to-disk copy function.

Access/SNA 5250 is compatible with CSI's entire line of SNA products.

Idris™ is a trademark of Whitesmiths, Ltd. XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Steve Martinez
(408) 725-1568

COMMUNICATIONS SOLUTIONS, INC.
992 S. Saratoga-Sunnyvale Road
San Jose, CA 95129

Access/SNA APPC

PDP-11 Operating System: CTS-300, Micro/RSTS, Micro/RSX,
RSTS, RSX, RT-11, ULTRIX-11

PRO Operating System: Idris™, XENIX™

Keywords: • Down-line loading • File transfer • Networking
• Office systems

Memory required: 128K.

This portable software emulation of IBM's Advanced Program-to-Program Communication (APPC), written in C language, allows application programs to communicate with one another by using IBM protocol LU6.2. Application programs can use the Basic Conversational Verb interface to Access/SNA APPC to send and receive data from IBM host-based applications, such as DISOSS. The architected verb interface also controls the allocation of SNA sessions to transaction programs, provides end-to-end error reporting capability, and controls data flow direction when two applications are communicating.

Access/SNA APPC is compatible with CSI's entire line of SNA products.

Idris™ is a trademark of Whitesmiths, Ltd. XENIX™ is a trademark of Microsoft Corporation.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Steve Martinez
(408) 725-1568

COMMUNICATIONS SOLUTIONS, INC.

992 S. Saratoga-Sunnyvale Road
San Jose, CA 95129

ACCULINK™

PDP-11 Operating System: RSTS, RSX

Keywords: • Asynchronous communication • Diagnostics
• File transfer

ACCULINK is a software module that permits error-free file transfer between the PDP-11 or VAX and a microcomputer running the ACCULINK-Micro product. The product is written in MACRO VAX or PDP-11 assembler language and uses standard operating system conventions. Both ASCII and binary files can be transferred error free. CRC-16 is the method of error detection, with automatic retransmission on error.

A version of this product is available for VAX computers.

Price: \$995 - \$1475

Contact: Janine Filion
(603) 659-5891

IE SYSTEMS INC.

P.O. Box 359

Newmarket, NH 03857

Any Databridge

PDP-11 Operating System: None required

Keywords: • Data conversion • File transfer
• Telecommunications

This software is a program solution for the exchange of data between incompatible application programs, regardless of hardware. Any enables you to use information from any computer in any of your application programs without data conversion, reformatting, or rekeying. Thus, you can easily move data from outdated computer resources to new, sophisticated ones; exchange data with any mini, micro, or mainframe; consolidate data from multiple sources to one central source; and manipulate and analyze data retrieved from other applications. Any resides on a completely independent system; therefore, no alteration of your present system is required. Any is completely end-user configurable and provides multiuser capability.

Any exists in two product forms:

- Any Databridge — Any is on a computer resource at your facility.
- Any Master Network — Access to Any is through Tymnet, Telenet, or dial-up telephone.

The Any interface card supports access to the products above from your PC.

A version of this product is available for VAX computers.

Price: \$15,000 – \$60,000

Contact: Loree Fahy
(213) 387-5371

CIPHERLINK CORP.

3807 Wilshire Boulevard, Suite 820
Los Angeles, CA 90010

Any Master Network

PDP-11 Operating System: None required

Keywords: • Data conversion • File transfer
• Telecommunications

This software is a program solution for the exchange of data between incompatible application programs, regardless of hardware. Any enables you to use information from any computer in any of your application programs without data conversion, reformatting, or rekeying. Thus, you can easily move data from outdated computer resources to new, sophisticated ones; exchange data with any mini, micro, or mainframe; consolidate data from multiple sources to one central source; and manipulate and analyze data retrieved from other applications. Any resides on a completely independent system; therefore, no alteration of your present system is required. Any is completely end-user configurable and provides multiuser capability.

Any exists in two product forms:

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The Any interface card supports access to the products above from your PC.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Loree Fahy
(213) 387-5371

CIPHERLINK CORP.

3807 Wilshire Boulevard, Suite 820
Los Angeles, CA 90010

AutoTELEX

PDP-11 Operating System: RSTS, RSX

Keywords: • Electronic mail • Networking
• Telecommunications

This telecommunications system allows any authorized terminal to send and receive messages, using a variety of public and private telecommunications networks in a controlled and secure manner. The system, while being installed in more than 100 sites worldwide, supports the ITT, RCA, Western Union, Telenet, Tymnet, GE Mark III, Datapac, CNCP Telex, and British Telecom networks. In addition, AutoTELEX can provide an interface to DECmail and VMS MAIL.

AutoTELEX provides a tried and tested system, multiterminal access, multiple-network access, easy message preparation, a friendly human interface, flexible message addressing, on-line message status, detailed journaling, on-line message storage, an applications interface, a message store-and-forward capability, and diagnostics.

In addition to reducing the time related to preparing and distributing messages by providing many ease-of-use features, AutoTELEX can optimize message routing and thereby reduce real transmission costs by as much as 90%.

A version of this product is available for VAX computers.

Price: \$3500 - \$9000

Contact: Richard Murray
(514) 849-6128

UBICOM INC.

425, boulevard de Maisonneuve West, Suite 1610
Montreal, Quebec H3A 3G5 Canada

BFX (Bulk File Transfer)

PDP-11 Operating System: RSTS

Keywords: • Data conversion • File transfer • Networking
• Telecommunications

Memory required: 128KB.

BFX software allows the rapid movement of sequential files among all types of CPUs. This program makes calls to NSC's NETEX software in order to move the data across NSC's HYPERchannel. BFX also provides the ability to submit jobs on other CPUs. With user-supplied JCL parameters, BFX/NETEX is responsible for I/O to/from disk, character

conversion, blocking of records, and differences in word sizes. User-written modules can easily be added to BFX in order to read/write data bases not supported by BFX. BFX can also access large multireel tape files and can run as a batch job or from a terminal. BFX is written in FORTRAN and assembly language.

A version of this product is available for VAX computers.

Price: \$7920

Contact: Gerry Hoppe
(612) 425-2202 ext. 2544

NETWORK SYSTEMS CORP.

7600 Boone Avenue North

Brooklyn Park, MN 55428

BLAST® (Blocked Asynchronous Transmission)

PDP-11 Operating System: RSX, RT-11

Keywords: • Asynchronous communication • File transfer
• Networking • Telecommunications

BLAST can transfer a binary or text file, error free; to any other version of BLAST. In addition, BLAST has auxiliary communications features, such as terminal mode, text file upload and capture, and autodial modem support.

BLAST software uses the standard asynchronous serial ports found on most computers, so no additional computer hardware is required. The protocol used by BLAST has an advanced, full-duplex sliding-window design that operates efficiently over noisy telephone lines and circuits subject to propagation delay, such as satellite links and network virtual circuits (LANs, Packet Networks, and PBXs).

BLAST supports remote sites with programs, patches, updates, revisions, and program repairs. Charts, graphs, sales data, and reports can be sent while receiving electronic mail and messages. Users can assign a central site to store text and binary files.

A version of this product is available for VAX computers.

Price: \$250 - \$2495

Contact: Polly Henderson
(504) 923-0888

COMMUNICATIONS RESEARCH GROUP

8939 Jefferson Highway

Baton Rouge, LA 70809

BMUX: A Protocol Converter Program

PDP-11 Operating System: RT-11

Keywords: • Disk utilities • Source code control • Statistics

This protocol converter uses an LSI-11 processor to connect up to 22 ASCII nonpolled terminals to up to two Burroughs polled lines, using Group Poll/Poll Select protocol. The user can reconfigure the system from the console terminal. Statistics are maintained on the associated

system disk. The configuration uses a minidiskette and an Andromeda controller. Software is nonoverlaid and could be committed to ROM. An LSI-11, 32K RAM, six DLV11Js, disk, and RT-11 V03B or later are required. All sources and the manual are on diskette. DECUS number 11-652.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

BSC/DV (Binary Synchronous Communications Support)

PDP-11 Operating System: RSTS

Keywords: • Device drivers/handlers

BSC/DV is a driver for the DIGITAL DV-11, a 16-line multiplexer. The driver can handle most BSC-based protocols and is suitable for transparent and nontransparent transmission, point-to-point and multidrop disciplines, 4-wire and 2-wire half-duplex lines, CRC-16 and LRC block checks, and line speeds up to 9600 bps.

A version of this product is available for VAX computers.

Price: \$5000 - \$7500

Contact: Martha Scott

(617) 861-0670

EVANS GRIFFITHS & HART, INC.

55 Waltham Street

Lexington, MA 02173

BSO/Com-1

PDP-11 Operating System: RSX

Keywords: • Asynchronous communication • File transfer

Memory required: 5KB minimum.

This high-speed, asynchronous, bidirectional communications facility permits error-free transfer of ASCII and binary files between PDP-11 computers and Intel Intellec systems or Motorola EXORciser-11 development systems. This system transmits binary files (Intel only) and ASCII files for maximum utility. The system also features fast data transfer. On-line help is available for command switches.

Price: Available upon request

Contact: Sales Department

(617) 894-7800

BOSTON SYSTEMS OFFICE, INC.

128 Technology Center

Waltham, MA 02254-9164

BSO/TekId Tektronix Emulator Loading Program

PDP-11 Operating System: IAS, Micro/RSX, RSTS, RSX, RT-11, TNIX

Keywords: • Microprocessor development • Programming tools

Memory required: 64KB.

This utility program interfaces a minicomputer to a Tektronix 8001, 8002, 8540, 8550, or 8560/61 Microprocessor Development Lab. The program permits transmission of microprocessor object programs in either direction between the two machines. Tekld also performs error checking and transmission timing and handshaking.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Sales Department

(617) 894-7800 or TWX: (710) 324-0760

BOSTON SYSTEMS OFFICE, INC.

128 Technology Center

Waltham, MA 02254-9164

BT-II Voice Response Peripheral

PDP-11 Operating System: CTS-300, RSTS, RSX, RT-11

Keywords: • Data collection • Signal processing
• Telecommunications

BT-II allows an authorized individual to use any pushbutton telephone to interact with any application program running on a PDP-11 system. The procedure is as follows:

- Pick up the phone.
- Dial a number.
- Input data by pressing the pushbuttons on the telephone. You will receive instructions, verification, and answers in a natural-sounding human voice.

BT-II connects on one end to your company's telephone system. On the other end it plugs into a standard terminal port on your DIGITAL computer. The BT-II is an FCC-approved, stand-alone unit supporting multiple telephone lines simultaneously with instant voice response. Call (617) 821-0326 for a demonstration.

A version of this product is available for VAX computers.

Price: \$16,610 +

Contact: Douglas Keelan, Marketing

(617) 821-0320

PERCEPTION TECHNOLOGY CORP.

50 Shawmut Road

Canton, MA 02021

BURCOM (DIGITAL/Burroughs Communication System)

PDP-11 Operating System: Micro/RSX, RSTS, RSX

PRO Operating System: P/OS

Keywords: • Asynchronous communication • File transfer
• Networking • Telecommunications

BURCOM allows a DIGITAL PDP-11, Professional, or VAX to communicate with Burroughs computers, using synchronous or asynchronous communication techniques. With either dial-up or leased telephone lines, BURCOM supports the Burroughs point-to-point conversational

and the poll-select protocols to give high throughput data transmission with low operating system overhead. BURCOM also allows VT100 and VT200 terminals to emulate the Burroughs MT983/993 terminals. BURCOM handles error detection and record retransmission automatically. BURCOM provides user-callable subroutines for sending and receiving messages, establishing a transmission link (including dialing of numbers), terminating a link, and reviewing the line status and error counts.

A version of this product is available for VAX computers.

Price: \$800 - \$5000

Contact: Elizabeth F. Epermanis
(919) 942-7801

APPLIED INFORMATION SYSTEMS, INC.
500 Eastowne Drive, Suite 207
Chapel Hill, NC 27514

CALOUT

PDP-11 Operating System: RSTS, RSX

Keywords: • Asynchronous communication • File transfer
• Networking • Telecommunications

CALOUT provides bidirectional file transfers and full virtual-terminal capabilities on practically any system with a dial-in line. Special remote modules allow transfers of all types of disk files, including binary program files, over ordinary telephone lines, with remarkable speed and perfect clarity. Remote modules are available for VMS, RSTS, RSX, RT-11, TSX, CTS, and CP/M operating systems. Virtual-terminal and file transfer capabilities are also possible with any computer that accepts a standard ASCII terminal, including IBM, CDC, Data General, and Honeywell. CALOUT works with all kinds of standard communications hardware and does not require licensing of remote systems.

A version of this product is available for VAX computers.

Price: \$1500

Contact: Casey Packard
(801) 224-5306

CLYDE DIGITAL SYSTEMS, INC.
P.O. Box 4500
Provo, UT 84603-4500

CALOUT/CONTRL

PDP-11 Operating System: RSTS, RSX

Keywords: • Modeling/simulation • Software utilities
• Telecommunications

Two powerful software utility tools running under the VMS and RSTS/E operating systems have been combined to give complete support interactively without the expense of traveling or networking. The

computer-to-computer communications tool CALOUT and the training and support tool CONTRL have been combined in a specially licensed package to offer ideal remote user support.

A version of this product is available for VAX computers.

Price: \$5000

Contact: Carolyn Clyde
(801) 224-5306

CLYDE DIGITAL SYSTEMS, INC.

P.O. Box 4500

Provo, UT 84603-4500

CB—User Communication Utility

PDP-11 Operating System: RSTS

Keywords: • Telecommunications

Memory required: 31KW.

This program, written in BASIC-PLUS, BASIC-PLUS-2, and MACRO-11, runs in 2K of user space and allows the same communication as on a citizen's band radio. A Talk channel sends messages to anyone monitoring that channel. A user can monitor the 40 channels available but can talk only on one.

Commands are defined to allow the user to change talk channels, monitor and unmonitor channels, list users by user or by channel, set "restricted" messages that will be received only if the sender and receiver (or receivers) have the same password set, and so on. A user can even execute system commands while still in CB, using an FG/BG (foreground/background) arrangement. DECUS number 11-771.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

CD: An RT-11 Device Driver for the DR-11W

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers

Memory required: 2800KW.

This device driver in standard RT-11 device-driver format implements a sophisticated communications protocol between two PDP-11 computers. Multiple logical links are possible at the same time, even though the DR-11W is a half-duplex device. The driver can recover from timeouts and hardware problems on the other side. See also CDPACK (DECUS number 11-612) — a collection of FORTRAN-callable routines for the DR-11W, which uses this driver. DECUS number 11-611.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

CDDRV (Cached Pseudo Disk CD)

PDP-11 Operating System: Micro/RSX, RSX

Keywords: • Device drivers/handlers • Disk utilities
• Statistics

This loadable device driver allows memory or a higher-speed disk drive to cache a user-definable portion of another disk drive. The cache uses a modified LRU (Least Recently Used) algorithm for the cache and handles cache write-through in two ways, depending on the type of data being cached.

The cache also includes a statistics package that can analyze the effectiveness of the cache in a given application. Up to 65,000 blocks of the cached disk can be defined to be cached, and up to 7500 blocks of high-speed cache are available.

Price: \$99 - \$4995

Contact: Sandra K. Graham
(617) 894-3278

ADVANCED COMPUTER SYSTEMS, INC.
250 Prospect Street
Waltham, MA 02154

CDPACK: Interface Routines for DR-11W

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers • Software utilities

Memory required: 1000KW.

This collection of routines, which interfaces to the DR-11W driver (DECUS number 11-611), implements no-wait, wait, and completion routine I/O. Multiple messages can be awaited, and the error status of each message is saved until the status routine is called. The interface is standardized so that the same FORTRAN routines can be used on RT-11 or RSX-11. See also CD (DECUS number 11-611) — device driver for the DR-11W, which is required software. DECUS number 11-612.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

CMR11/CMV11 Software Driver

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers • Networking

This loadable device driver handles the UNIBUS to Compact Micro Remote (CMR) host controller module interface (CMR11) or the Q-bus to CMR host controller module (CMV11). The CMR11/CMV11 Driver, in conjunction with a valid host controller module(s) and CMR01 Remote unit(s), is used for distributed industrial-control-network monitor and control applications. Access is provided to the CMR11 Host/Remote functional capabilities that are implemented in microprocessor-based firmware through standard FORTRAN and MACRO-11 QIO calls.

The CMR11/CMV11 Driver is RSX-11M/M-PLUS/S compatible and supports both mapped and unmapped memory configurations, single- or multiple-host controller modules, and either UNIBUS- or Q-bus-supported CPUs.

The driver provides communication between user application software and the CMR firmware-implemented process I/O network. The driver supports the standard RSX-11M/M-PLUS/S QIO directives ATTACH, DETACH, and CANCEL for CMR-specific functions. The driver also supports up to 16 host controller modules, each of which can support 16 remotes for each communication port with CMR limited distance modems (LDMs) or up to 63 remotes for each communication port with EIA standard RS232-C modems. Each remote unit can handle up to 256 process I/O points.

Refer to SPD #14.76.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$600 – \$3000

Contact: Consult your local DIGITAL sales office (see Introduction).

COM: An RT/VMS Communications Package

PDP-11 Operating System: RT-11, TSX-PLUS™

Keywords: • Device drivers/handlers • File transfer

Memory required: 8KW.

The 2-part COM package supports communications and source file transfer between an RT-11 environment and VMS. The first part of the package, a FORTRAN program to support the communications protocol, provides a communication framework that can be easily understood by anyone wishing to modify the protocol for other applications. The second part of the package is a special RT-11 driver written in MACRO to support modem communications at the system level. The driver has a large buffer for text coming from VMS and uses XON/XOFF protocol with VMS to manage the buffer. DECUS number 11-609.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

ComLINK: Remote Communications Enhancement

PDP-11 Operating System: RT-11

Keywords: • Debugging • Networking • Telecommunications

This package for streamlined communications with remote systems was created for use on PDP-11 and LSI-11 systems to bring speed and flexibility to information transfer through remote terminal emulation. ComLINK, interactive and user-command driven, includes an on-line help response to guide your selection of features and supports configuration of baud rates, I/O ports, and a status display. Applications include interactive communications with time-sharing services, as in electronic mail and data base access services; transfer of files between local

systems with incompatible media formats or between distant systems reliant on cost-sensitive connect time and toll line charges; and communication with target CPUs, as in software or hardware development with your system as host or supervisor.

ComLINK-plus, an enhanced version of ComLINK, includes a command file interface supporting automated operation driven by a user-written, real-time command file. This command file interface supports more than 20 special directives for loops, synchronization with remote prompts, timeouts, operator queries, logical and string symbol definitions, conditional tests, jumps, and debugging functions.

Price: \$775 - \$1255

Contact: Paul F. Fitts

(914) 373-9003

INNOVATEK MICROSYSTEMS INC.

Smithfield Road, R1 Box 104

Millerton, NY 12546

COMM IOP-DUP

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers • Signal processing

The COMM IOP-DUP is an intelligent Direct Memory Access (DMA) controller for synchronous communications lines. The software consists of a KMC11-A microprogram and a microprogram loader. The loader runs as a privileged task under the RSX-11M operating system.

Under the direction of a user-written driver executing in the PDP-11 processor, the KMC11 microprogram can control multiple DUP11 synchronous communication lines connected to the PDP-11 UNIBUS. At system start-up time, the COMM IOP-DUP loader transfers the microprogram to the KMC11. The driver must then initialize the microprogram and identify the line addresses, line characteristics, and the I/O buffers that the microprogram is to use.

Driver-defined buffer descriptor lists identify the I/O buffers for each communications line, allowing main memory buffers to be chained. A list consists of 3-word entries, with each entry identifying an I/O buffer. Lists can be any arbitrary length, and the driver can assign up to two receive and two transmit buffer descriptor lists to each COMM IOP-DUP-controlled communication line.

The driver can select line characteristics, such as full- or half-duplex transmission. Data transmission protocols are transparent to the COMM IOP-DUP. The driver can use the DIGITAL Data Communications Message Protocol (DDCMP) or a "bit stuffing" protocol, such as the CCITT X.25 Standard, ISO's HDLC, IBM's SDLC, Burroughs' BDLC, or DATAPAC's SNAP. The COMM IOP-DUP can relieve the PDP-11 central processor of many of the tasks associated with handling synchronous communications lines: handling modem control functions; calculating, checking, and sending CRC characters; controlling receiver synchronization; recognizing slave station addresses for

multidrop operation and numbered and unnumbered messages; and computing numbered message lengths. For bit-stuffing operation, COMM IOP-DUP can control flag character generation and checking, secondary station selection, frame check sequence generation and detection, and error and abort detection.

The driver is responsible for half-duplex and multidrop line control, as well as for header formatting and message sequencing, acknowledgment, and retransmission.

Refer to SPD #10.12.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$130 - \$1680

Contact: Consult your local DIGITAL sales office (see Introduction).

COMM IOP-DZ

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers • Signal processing

The COMM IOP-DZ, an intelligent Direct Memory Access (DMA) controller for asynchronous terminal communications lines, performs DMA message assembly on reception and disassembly on transmission. The COMM IOP-DZ relieves the PDP-11 central processor of many tasks associated with handling asynchronous terminal lines. Those functions include character echoing, received-message formatting, character deletion, and buffer chaining.

The software consists of a KMC11-A microprogram and a microprogram loader. The loader runs as a privileged task under the RSX-11M operating system.

Under the direction of a user-written driver executing in the PDP-11 processor, the KMC11 microprogram can control up to 48 terminals connected to the PDP-11 UNIBUS through DZ11 asynchronous line multiplexers. Terminals operate on a multibuffered basis in full-duplex or echoplex mode.

At system start-up time, the COMM IOP-DZ loader transfers the microprogram to the KMC11. The driver must then initialize the microprogram and identify the line addresses, line characteristics, and I/O buffers that the microprogram is to use.

Driver-defined buffer descriptor lists identify the I/O buffers for each communications line, allowing main memory buffers to be chained. A list consists of 3-word entries, with each entry identifying an I/O buffer. Lists can be any arbitrary length, and the driver can assign up to two receive and two transmit buffer descriptor lists to each COMM IOP-DZ-controlled terminal line.

In addition to the buffer descriptor lists, COMM IOP-DZ uses 128-byte functional-mode control tables defined by the driver in main memory space. Those tables enable the driver to control how the COMM IOP-DZ processes any given input character. As many as eight functional-mode control tables can be assigned to a given line, enabling the

COMM IOP-DZ to recognize the process-multiple-character sequences. Tables can be shared by multiple lines.

The driver must reserve a block of PDP-11 memory for the exclusive use of the COMM IOP-DZ microprogram as temporary storage. The size of the memory to be reserved must be $16 \times$ (the highest line number assigned) + 1 word long.

Refer to SPD #10.11.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$158 - \$1680

Contact: Consult your local DIGITAL sales office (see Introduction).

Converter-22

PDP-11 Operating System: Micro/RXS, RSX

Keywords: • Development tools • Device drivers/handlers
• Disk utilities • Software utilities

Converter-22 allows you to upgrade your RSX-11M system to full 22-bit addressing while continuing to use your 18-bit device controllers. Because Converter-22 supports the entire RSX family, you can upgrade your RSX-11M system to either RSX-11M-PLUS or Micro/RXS without purchasing replacement 22-bit device controllers.

Price: \$995

Contact: Karen C. McCann

(617) 443-5106/6376

EEC SYSTEMS INC.

327/E Boston Post Road

Sudbury, MA 01776

CTS-11 Software Driver for RSX-11M

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers

This card terminal device driver is used with RSX to support the CTS-11 hardware card reader and punch that is sold by DIGITAL's Computer Special Systems Group. The loadable driver is accessed with READs and WRITEs from FORTRAN or with QIOs from MACRO. The driver permits the CTS-11 to read and punch cards in ASCII format data and to print ASCII characters on punched cards.

The user can select either of two hoppers or two stackers, read and punch 80-column cards in 026 or 029 card code format, delete trailing spaces on card read, request automatic loading of cards to be printed or punched (this feature steals a load cycle to increase the punch rate), and have one job read a card deck while another job punches or prints cards.

Further information on the CTS-11 hardware is available through the DIGITAL sales force. DECUS number 11-441.

Associated documentation: *RSX-11M Sysgen Manual* (DIGITAL publication).

Note: Further versions beyond RSX-11M V3.1 will require some source modification.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

CTS-300 RDCP (2780/3780)

PDP-11 Operating System: CTS-300

Keywords: • Data conversion • Networking
• Signal processing

This Remote Data Communications Package (RDCP) enables a D150 or D300 system running CTS-300 to act as a Remote Job Entry (RJE) terminal. RDCP users can transmit data to another CTS-300 RDCP system, to a DIGITAL system running a 2780/3780 emulator, or to an IBM 360/370 system. RDCP operates at line speeds up to 9600 bps on D330 and D350 series and 4800 bps on D150 and D320 series. Switched or private circuits using Bell System series 201, 208, or 209 modems or equivalent are supported.

CTS-300 RDCP appears as an IBM 2780 Model 2 (with card punched data routed to a disk file) or 3780 data transmission terminal in a point-to-point synchronous data link operating in a standard 2780 or 3780 format. Records of different length can be transmitted. Received data can be up to the maximum buffer size of 400 characters for 2780 and 512 for 3780.

Received data can be stored on disk or printed on the line printer.

Refer to SPD #10.61.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$718 - \$2350

Contact: Consult your local DIGITAL sales office (see Introduction).

CUX: A Virtual Terminal Program

PDP-11 Operating System: RSX

Keywords: • File transfer • Telecommunications

Memory required: 13KW maximum.

This data communications program provides virtual terminal support for a PDP-11 running under RSX-11M. CUX is functionally equivalent to UNIX* cu, managing an interactive conversation between two systems, with possible transfer of text files and I/O redirection.

Written in DECUS C, CUX is well documented and easily modified. The program can be conditionally compiled for tailored communication with VMS or UNIX.* DECUS number 11-700.

* UNIX is a trademark of AT&T Bell Laboratories.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Data Entry Interface to Remote Hand-Held Computer

PDP-11 Operating System: RSTS

Keywords: • Data conversion • Telecommunications

This program accepts incoming data from a portable hand-held computer, such as an MSI/88, over a standard telephone data line and optionally converts the data into a file format. This minisystem can be easily custom tailored. The application works very well in such environments as remote inventory ordering and physical inventory data entry for comparison to book inventories.

Required hardware includes a DL11E-style interface and an MSI/88-style hand-held computer.

Price: \$1500

Contact: Steven L. Buth

(509) 624-4248 or (800) 824-9631

SPOKANE COMPUTER SERVICES, INC.

West 915 Second Avenue

Spokane, WA 99204

DECdataway Intelligent Subsystem

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers • File transfer

DECdataway software allows application programs to execute in a remote subsystem under RSX-11S and to communicate through the DECdataway with tasks in a DECdataway host system (DPM, DPM-PLUS software, or a VAX-11 DY32). Supported DECdataway Intelligent Subsystems include DPM50 DECdataway I/O and DPM23 Programmable DECdataway.

User application programs in a remote subsystem can be written in MACRO, FORTRAN-77, or FORTRAN IV. Interactive program-to-program communications are provided between programs in a remote subsystem and programs in a DECdataway host. A maximum of 32 logical links can be established between programs in the DECdataway host and programs in each remote subsystem.

Refer to SPD #15.18.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

DECdx/RSTS

PDP-11 Operating System: RSTS

Keywords: • Asynchronous communication • File transfer
• Word processing

DECdx/RSTS is a layered software product that resides on PDP-11 RSTS/E host systems. DECdx enables WPS-8-based systems, both stand alone and shared resource, and the host to be linked for better

system utilization, document exchange, and information and data sharing.

Users of DECmates and other DIGITAL WPS-8-based systems can use DECdx to transfer documents between the WPS-8 system and the RSTS/E host mainframe over a serial line interface. The WPS word processing document formats and print control characters are retained. During a DECdx session, the WPS-8 system operates as though it were another terminal on the host system.

Communication between the WPS-8 and RSTS/E systems uses the DIGITAL Standard Document Exchange (DX) protocol and file format to detect and correct errors.

Refer to SPD #13.32.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$2350

Contact: Consult your local DIGITAL sales office (see Introduction).

DECnet-11M-PLUS: RSX-11M-PLUS Network Software

PDP-11 Operating System: RSX

Keywords: • Asynchronous communication • File transfer
• Networking

DECnet-11M-PLUS allows a suitably configured RSX-11M-PLUS system to participate as a routing or nonrouting (end) node in DECnet computer networks. DECnet-11M-PLUS is a Phase IV network product and is warranted for use only with supported Phase III and Phase IV products supplied by DIGITAL.

A DECnet Phase IV network can contain up to 1023 nodes, given proper planning. Phase III nodes participating in Phase III/IV networks are limited to the Phase III routing capability of 255 nodes. Phase II nodes are not supported.

DECnet-11M-PLUS offers task-to-task communications, utilities for network file operations, network command terminal support, and network resource-sharing capabilities, using the DIGITAL Network Architecture (DNA) protocols. DECnet-11M-PLUS communicates with adjacent nodes over synchronous and asynchronous communication lines, Ethernet Local Area Networks (LANs), and parallel interfaces. Communication using X.25 circuits over selected Packet Switched Data Networks (PSDN) is also possible. That requires DECnet-11M-PLUS to be configured with the RSX-11 PS/M-PLUS product. Access to DECnet-11M-PLUS is supported for RSX-11M-PLUS user programs written in MACRO-11, FORTRAN IV, FORTRAN-77, COBOL-81, and BASIC-PLUS-2.

The functions available to an RSX-11M-PLUS user depend, in part, on the configuration of the rest of the network. Each DECnet product offers its own level of functionality and its own set of features to the user. Networks consisting entirely of DECnet-11M-PLUS nodes can have the full functionality described in the SPD (Software Product

Description). Networks that mix DECnet-11M-PLUS nodes with other DECnet products can limit the functions available to the DECnet-11M-PLUS user because some DECnet-11M-PLUS features are not supported by all DECnet products. DECnet-11M-PLUS provides the same primary services on all systems; however, some supplied optional features require hardware configurations larger than the minimum supported systems.

The DECnet products and functions available to users on mixed networks can be determined by comparing the SPDs for the component products.

Refer to SPD #10.66.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1050 - \$3575

Contact: Consult your local DIGITAL sales office (see Introduction).

DECnet-11M: RSX-11M Network Software

PDP-11 Operating System: RSX

Keywords: • Asynchronous communication • File transfer
• Networking

DECnet-11M allows a suitably configured RSX-11M system to participate as a routing or nonrouting (end) node in DECnet computer networks. DECnet-11M is a Phase IV network product and is warranted for use only with supported Phase III and Phase IV products supplied by DIGITAL.

A DECnet Phase IV network can contain up to 1023 nodes, given proper planning. Phase III nodes participating in Phase III/IV networks are limited to the Phase III routing capability of 255 nodes. Phase II nodes are not supported.

DECnet-11M offers task-to-task communications, utilities for network file operations, homogeneous network command terminal support, and network resource-sharing capabilities, using the DIGITAL Network Architecture (DNA) protocols. DECnet-11M communicates with adjacent nodes over synchronous and asynchronous communication lines, Ethernet Local Area Networks (LANs), and parallel interfaces. Communication using X.25 circuits over selected Packet Switched Data Networks (PSDN) is also possible. That requires DECnet-11M to be configured with RSX-11 PSI/11M product. Access to DECnet-11M is supported for RSX-11M user programs written in MACRO-11, FORTRAN IV, FORTRAN-77, BASIC-PLUS-2, and COBOL-81.

Networks consisting entirely of DECnet-11M nodes can have the full functionality described in the SPD (Software Product Description). Networks that mix DECnet-11M nodes with other DECnet products can limit the functions available to the DECnet-11M user because some DECnet-11M features are not supported by all DECnet products. Some supplied optional features require hardware configurations larger than the minimum supported systems.

The DECnet products and functions available to users on mixed networks can be determined by comparing the SPDs for the component products.

Refer to SPD #10.75.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1320 – \$4060

Contact: Consult your local DIGITAL sales office (see Introduction).

DECnet-11S: RSX-11S Network Software

PDP-11 Operating System: RSX

Keywords: • Asynchronous communication • File transfer
• Networking

DECnet-11S allows a suitably configured RSX-11S system to participate as a routing or nonrouting (end) node in DECnet computer networks. DECnet-11S is a Phase IV network product and is warranted for use only with supported Phase III and Phase IV products supplied by DIGITAL.

A DECnet Phase IV network can contain up to 1023 nodes, given proper planning. Phase III nodes participating in Phase III/IV networks are limited to the Phase III routing capability of 255 nodes. Phase II nodes are not supported.

DECnet-11S offers task-to-task communications, utilities for network file operations, homogeneous network command terminal support, and network resource-sharing capabilities, using the DIGITAL Network Architecture (DNA) protocols. DECnet-11S communicates with adjacent nodes over synchronous and asynchronous communication lines, Ethernet Local Area Networks (LANs), and parallel interfaces. Access to DECnet-11S is supported for RSX-11S tasks written in MACRO-11, FORTRAN IV, and FORTRAN-77 that have been assembled/compiled and linked on a host system.

The functions available to an RSX-11S user depend, in part, on the configuration of the rest of the network. Each DECnet product offers its own level of functionality and its own set of features to the user. Networks consisting entirely of DECnet-11S nodes can have the full functionality described in the SPD (Software Product Description). Networks that mix DECnet-11S nodes with other DECnet products can limit the functions available to the DECnet-11S user because some DECnet-11S features are not supported by all DECnet products. DECnet-11S provides the same primary services on all systems; however, some supplied optional features require hardware configurations larger than the minimum supported systems.

The DECnet products and functions available to users on mixed networks can be determined by comparing the SPDs for the component products.

Refer to SPD #10.74.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1320 – \$4060

Contact: Consult your local DIGITAL sales office (see Introduction).

DECnet-IAS

PDP-11 Operating System: IAS

Keywords: • Asynchronous communication • File transfer
• Networking

This Phase III network product allows a suitably configured IAS Version 3.2 system to participate as a routing or nonrouting (end) node in a DECnet computer network. DECnet-IAS is warranted for use only with Phase II and Phase III DECnet products supplied by DIGITAL.

DECnet-IAS offers task-to-task communications, utilities for network file operations, homogeneous network command terminal support, and network resource-sharing capabilities, using DIGITAL Network Architecture (DNA) protocols. DECnet-IAS communicates with adjacent nodes (adjacent nodes control opposite ends of a point-to-point communication line) over synchronous and asynchronous communication lines and parallel interfaces. Access to DECnet-IAS is supported for IAS user programs written in MACRO-11, FORTRAN IV, FORTRAN-77, BASIC-PLUS-2, and COBOL.

The network functions available to an IAS user depend, in part, on the configuration of the rest of the network. Each DECnet product offers its own level of functions and its own set of features to the user. Networks consisting entirely of DECnet-IAS nodes can have the full functionality described in the SPD (Software Product Description). Networks that combine DECnet-IAS nodes with other DECnet products can limit the functions available to the DECnet-IAS user because some DECnet-IAS features are not supported by all DECnet products. Conversely, a user of another DECnet implementation will not necessarily have access to all DECnet-IAS functions.

DECnet products and functions available to users on mixed networks can be determined by comparing the SPDs for the component products.

Refer to SPD #10.71.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$798 – \$5000

Contact: Consult your local DIGITAL sales office (see Introduction).

DECnet-Micro/R SX

PDP-11 Operating System: Micro/R SX

Keywords: • Asynchronous communication • File transfer
• Networking

DECnet-Micro/R SX allows a suitably configured Micro/R SX system to participate as a nonrouting (end) node in DECnet computer networks. This Phase IV network product is warranted for use only with supported Phase III and Phase IV products supplied by DIGITAL.

DECnet Phase IV networks can contain up to 1023 nodes for a network area, given proper network planning. Phase III nodes participating in Phase III/IV networks are limited to the Phase III routing capability of 255 nodes. Phase II nodes are not supported.

The product offers task-to-task communications, utilities for network file operations, network command terminal support, and network resource-sharing capabilities using the DIGITAL Network Architecture (DNA) protocols. DECnet-Micro/RXS communicates with adjacent nodes over synchronous and asynchronous communication lines and through Ethernet Local Area Networks (LANs). Access to DECnet-Micro/RXS is supported for Micro/RXS user programs written in MACRO-11, Micro/RXS FORTRAN-77, Micro/RXS BASIC-PLUS-2, and Micro/RXS COBOL-81.

Micro/RXS operating system Base Kit is prerequisite.

Refer to SPD #18.27.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$960

Contact: Consult your local DIGITAL sales office (see Introduction).

DECnet Router Server

PDP-11 Operating System: RSX

Keywords: • Networking

This product runs on an Ethernet communications server hardware unit to provide DECnet routing functions in a network of one or more host computers. Those hosts can be Phase III or Phase IV routing nodes or end nodes — for example, DECnet-RT Version 2.1 and DECnet/E Version 2.0. The DECnet Router Server connects directly to the Ethernet to provide routing to nodes off the Ethernet connected through the unit's synchronous/asynchronous lines.

Phase IV DECnet networks are hierarchical networks that can be segmented into areas. The DECnet Router Server supports both intra- (Level 1) and interarea (Level 2) routing for transporting messages between nodes. Those nodes can be remote Phase III/IV routing nodes or end nodes in the same area or different areas or other DECnet router servers connected to other Ethernets in the same area or different areas. End nodes connected directly to an Ethernet must use DECnet router servers or Phase IV host routing nodes on the same Ethernet for message routing off that Ethernet. A routing node is not required on an Ethernet if the end nodes connected to that Ethernet communicate only with each other. However, if the Ethernet directly connects nodes with different area addresses, an area routing node is required to transport messages between those areas. Use of the DECnet Router Server off-loads certain communications processing on host nodes that would otherwise serve as routing nodes on the Ethernet.

The DECnet Router Server implements Phase IV DECnet asynchronous and synchronous DDCMP routing and network management. Through the use of Phase IV DECnet protocols, DECnet networks can

contain up to 63 areas, each containing up to 1023 nodes, given proper network planning. The DECnet Router Server can be used to connect to Phase III nodes, providing migration of Phase III networks with connectivity to Phase IV Ethernet nodes.

The DECnet Router Server is warranted for use only with supported Phase III and Phase IV DECnet products supplied by DIGITAL.

Refer to SPD #30.34.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for VAX computers.

Price: \$2420 – \$2660

Contact: Consult your local DIGITAL sales office (see Introduction).

DECnet-RT

PDP-11 Operating System: RT-11

Keywords: • Asynchronous communication • File transfer
• Networking

DECnet-RT is a Phase III network product that allows a suitably configured RT-11 Foreground/Background (FB) system to participate as a nonrouting (end) node in DECnet computer networks. DECnet-RT offers task-to-task communications, utilities for network file operations, and network resource-sharing capabilities, using DIGITAL Network Architecture (DNA) protocols. DECnet-RT communicates with adjacent nodes over synchronous and asynchronous communication lines. Access to DECnet-RT is supported for RT-11FB user programs written in MACRO-11 and FORTRAN IV.

DECnet-RT is warranted for use only with Phase III and Phase IV DECnet products supplied by DIGITAL. The functions available to an RT-11FB user depend, in part, on the configuration of the rest of the network. Each DECnet product offers its own level of functionality and its own set of features to the user. Networks consisting entirely of DECnet-RT nodes — for example, a 2-node network — can have the full functionality described in the SPD (Software Product Description). Networks that mix DECnet-RT nodes with other DECnet products will enhance the functions available to the DECnet-RT user. As a nonrouting node, DECnet-RT does not support all the features of a routing node.

The DECnet products and functions available to users on mixed networks can be determined by comparing the SPDs for the component products.

Refer to SPD #10.72.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$650

Contact: Consult your local DIGITAL sales office (see Introduction).

DECnet/E**PDP-11 Operating System: RSTS****Keywords:** • File transfer • Networking

This Phase III network product allows a suitably configured RSTS/E system to participate as a routing or nonrouting (end) node in DECnet computer networks. DECnet/E is warranted for use only with supported Phase III and Phase IV DECnet products supplied by DIGITAL.

DECnet/E offers task-to-task communications, homogeneous network command terminals, network file transfer, multipoint line support, and adaptive routing, using the DIGITAL Network Architecture (DNA) protocols. DECnet/E communicates with adjacent and nonadjacent Phase III and Phase IV nodes. Phase II nodes are not supported. Adjacent nodes control opposite ends of a point-to-point communication line or are in a master/slave relationship on a multipoint line. DECnet/E functions are available to RSTS/E user programs written in BASIC-PLUS, BASIC-PLUS-2, FORTRAN IV, FORTRAN-77, PDP-11 COBOL, COBOL-81, or MACRO-11.

DECnet/E is a Phase III product; direct connection to an Ethernet-based Local Area Network (LAN) is not supported. DECnet/E nodes can access, or be accessed by, Phase IV LAN nodes through a Router Server or through Phase IV routing nodes on the LAN.

Networks consisting entirely of DECnet/E Phase III nodes have all the functions described in the SPD (Software Product Description). Networks that combine DECnet/E nodes with other DECnet products can limit the functions available to the DECnet/E user, since some DECnet/E features may not be supported by all DECnet products. Conversely, a user of another DECnet implementation will not necessarily have access to all DECnet/E functions.

The DECnet products and functions available to users on mixed networks can be determined by comparing the SPDs for the appropriate products.

Refer to SPD #10.73.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$995 - \$3200**Contact:** Consult your local DIGITAL sales office (see Introduction).**DECnet/SNA RSX 3270 Terminal Emulator****PDP-11 Operating System: RSX****Keywords:** • Data conversion • File transfer • Networking
• Telecommunications

This layered software product allows users of a VT100 or other DIGITAL terminal or personal computer in VT100 emulation mode, on suitably configured RSX-11M or RSX-11M-PLUS systems within a DECnet network, to interactively access IBM host-based applications, originally developed for IBM 3270 display stations in a Systems Network Architecture (SNA) networking environment. Access to the IBM

host-based applications system from RSX systems is through the DECnet/SNA Gateway.

In normal operation, an IBM system transfers a formatted screen, much like a "form," to the 3270 block mode terminal, and the user fills in any data required by the form. When the form is completed, the entire screen is transmitted to the IBM host system as a single unit.

This mechanism is emulated with a VT100 character-mode terminal by buffering the form in the DECnet host's memory and displaying it on the terminal. When the screen form is completed, it is sent to the IBM system, using the DECnet/SNA Gateway.

Translation tables on the respective systems convert ASCII terminal input to a subset of IBM multinational EBCDIC code for transfer through the Gateway. Those tables can be modified to fit nonstandard character sets.

DECnet-11M or DECnet-11M-PLUS and DECnet/SNA RSX Gateway Management software are prerequisite.

Refer to SPD #13.44.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1000

Contact: Consult your local DIGITAL sales office (see Introduction).

DECnet/SNA RSX Application Interface

PDP-11 Operating System: RSX

Keywords: • Asynchronous communication • Networking
• Telecommunications

This layered software product allows user-written applications running on suitably configured RSX-11M or RSX-11M-PLUS systems within a DECnet network to exchange messages with cooperating applications in an IBM host. The AI software exists in the RSX system as a device driver. Access between the cooperating application programs is through the DECnet/SNA Gateway.

Functionally, the interface is similar to the DECnet task-to-task capability. The interface is very general and allows most features of the SNA Session Layer to be accessed by the cooperating applications. The interface provides RSX users with mechanisms for accessing IBM systems from applications programs. This facility is particularly useful for applications that require facilities other than RJE and 3270 Terminal Emulation.

DECnet-11M or DECnet-11M-PLUS and DECnet/SNA RSX Gateway Management software is prerequisite.

Refer to SPD #13.46.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1500

Contact: Consult your local DIGITAL sales office (see Introduction).

DECnet/SNA RSX Remote Job Entry**PDP-11 Operating System:** RSX**Keywords:** • Networking • Telecommunications

This layered software product allows suitably configured RSX-11M or RSX-11M-PLUS systems within a DECnet network to function as an SNA/RJE workstation or group of workstations that can transmit batch jobs to an IBM host and receive job output. The RSX system user can prepare batch jobs in files, submit the jobs, and obtain the job output. Access to the SNA-based, IBM host environment is the DECnet/SNA Gateway.

Use of batch interaction with the IBM host system permits RJE to be used for periodic update of data bases and other applications. Easily modified translation tables resident in the DECnet/SNA Gateway convert ASCII code to a subset of IBM multinational EBCDIC for transmission to the IBM host and from EBCDIC to ASCII on reception of job output.

Workstation users submit jobs to RSX queues. The workstation transmits the queued jobs to the IBM host over the input stream associated with a queue. The IBM host returns job output to a workstation over various output streams. Each IBM output stream will have an RSX directory assigned to it. As output from jobs is received on an output stream, it is assigned a file name identical to the name given to the job as it is executed in the IBM system (normally, names are specified by user-supplied JCL). This mechanism allows easy identification of a particular job when several users share the same job stream. Job output can be directed to some system on the DECnet network other than the initiating system.

RSX users with the required privilege can issue a set of restricted commands to manage the workstation. These commands allow the user to initialize and control the workstation and to communicate interactively with the IBM batch subsystem.

DECnet-11M or DECnet-11M-PLUS and DECnet/SNA RSX Gateway Management software are prerequisite.

Refer to SPD #13.45.xx when requesting further information on this product from you local DIGITAL sales office.

Price: \$1000

Contact: Consult your local DIGITAL sales office (see Introduction).

DIALBACK**PDP-11 Operating System:** RSTS, RSX**Keywords:** • Security • Telecommunications

This software security tool protects dial-in communications lines from unauthorized access. DIALBACK stops all dial-in users before they attempt to log onto the system and requires them to identify themselves. If a valid identification code is entered, DIALBACK immediately disconnects and calls back to the telephone number associated

with that I.D. An unauthorized user who obtains a valid DIALBACK I.D. cannot access the system from anywhere but an authorized workstation, in which case the activities are completely traceable.

A version of this product is available for VAX computers.

Price: \$800 – \$2000

Contact: Casey Packard

(801) 224-5306

CLYDE DIGITAL SYSTEMS, INC.

P.O. Box 4500

Provo, UT 84603

DIALUP

PDP-11 Operating System: RSTS

Keywords: • Asynchronous communication • File management
• Telecommunications

This RSTS/E package uses a standard asynchronous terminal line to link a RSTS/E or a VMS system to a remote computer. If the remote system's terminal service can generate and act on XON and XOFF, DIALUP supports the following operations:

- User-directed dialing of the remote system through a DN-11-controlled 801 automatic calling unit or similar device, such as Vadec's VA821 dialers
- Support for Hayes and other similar modems with autodialing capability
- Virtual connection of the user's terminal to the remote system
- Transmission of ASCII text files to and from the remote system

If the remote system is a RSTS/E or a VMS system, DIALUP supports check-summed, attribute-preserving transmission of binary files to and from the remote system.

DIALUP operates in two modes: command and connect. In command mode, commands are issued to the DIALUP program to choose a line to use as a remote link, set local link speed and characteristics, call the remote system, and so forth. In connect mode, the user's CRT either behaves as though it were a terminal on the remote system or monitors file-transfer activity on the link.

A version of this product is available for VAX computers.

Price: \$1700

Contact: Martha Scott

(617) 861-0670

EVANS GRIFFITHS & HART, INC.

55 Waltham Street

Lexington, MA 02173

DIBOL Communications Package**PDP-11 Operating System:** CTS-300, RT-11**Keywords:** • Data entry • File transfer • Software utilities

This package can be used to transmit ASCII text to a remote system, to send ASCII text from a remote to a local system, to receive ASCII text from a local site, or to send or receive a file. The programs are suitable for use with either CTS-300 or CTS-500 Version 6 or Version 7.

Also included is an "ACCP" subroutine to facilitate data entry from the terminal and "DISPL" and "CENT" subroutines to support standard and "centered" display output to the VT100. DECUS number 11-493.

Price: \$5 - \$225**Contact:** DECUS (see Introduction)**DID-X.25****PDP-11 Operating System:** CTS-300, RT-11**Keywords:** • Device drivers/handlers • Networking
• Pre- and postprocessors • Process control

Borer Electronics produces a communication front-end processor for the public packet-switching networks operating according to CCITT X.25. This fast processor — Datanet type 1123 — contains all necessary firmware up to level 3 for handling up to 256 virtual channels at a maximum speed of 48K baud. The processor interconnects physically, through the international standardized interface system CAMAC (IEEE 584, IEC 516), to DIGITAL's LSI-11 or PDP-11.

DID-X.25 acts as a driver under RT-11 for the communication processor, thus providing the user with full transport service according to the ISO 7-layer architecture model for open system interconnection.

A ready-to-use package for packet-switching communication, the DID-X.25 can also be used as the public network-driving part of a gateway, especially since the interface system allows for expansions with memories, I/O channels, and other communication links.

Price: \$2000**Contact:** J. G. Gander or M. Ryser

65-31 11 31

BORER ELECTRONICS AG

P.O. Box 148

CH-4501 Solothurn Switzerland

DIGICOMM-11**PDP-11 Operating System:** RSX**Keywords:** • Electronic mail • Telecommunications

Memory required: 256KB and 10MB storage capacity.

This self-contained package, easy to learn and use and written in MACRO-11, provides low-cost communications on private telegraph and public Telex lines. The package incorporates message switching,

text processing, and office automation. The system applies store-and-forward technique; runs by itself in real time for 24 hours a day; can enter, edit, store, and retrieve any document; does not require a DP staff; and has reentrant major parts.

A version of this product is available for VAX computers.

Price: \$1000 – \$10,000

Contact: Dr. E. Wessner

(0222) 54 33 52-53

C.T.A. COMPUTER TECHNOLOGY & AUTOMATION

Margaretenzügel 12

A-1050 Vienna Austria

DIGIPOINT

PDP-11 Operating System: RSTS

Keywords: • Data conversion • File transfer • Spreadsheets
• Translators

DIGIPOINT links the DIGICALC spreadsheet for DIGITAL minicomputers with Lotus 1-2-3™ and Symphony™ for personal computers. DIGIPOINT eliminates the manual entry of numbers, text, equations, and cell format. The system software automatically transfers data between personal computers and a DIGITAL central data system and between software products for minicomputers.

DIGIPOINT is designed to enter large amounts of data base information into DIGICALC worksheets and to transfer worksheet results to external files. The transfer is bidirectional, so data from a DIGICALC spreadsheet can be transferred to graphics, word processing, and other data bases.

DIGIPOINT is efficient and cost effective for large Lotus users because they need just one copy of DIGIPOINT, which resides in the central data system, to transfer data back and forth between Lotus 1-2-3 or Symphony and DIGICALC. The file transfer program X-modem is included with DIGIPOINT.

DIGIPOINT also transfers data between two data bases. The program is compatible with Data Interchange Format files and supports RMS sequential, indexed, and relative file organizations. The program allows easy access to information in a standard format, such as a library of templates.

Lotus 1-2-3™ and Symphony™ are trademarks of Lotus Development Corporation.

A version of this product is available for VAX computers.

Price: \$995

Contact: Lawson Abinanti

(206) 822-3140

WHY SYSTEMS

10607 N.E. 38th Place

Kirkland, WA 98033

DMG/NET**PDP-11 Operating System:** RSTS**Keywords:** • Asynchronous communication • Debugging
• File transfer • Networking

DMG/NET provides controlled computer-to-computer communications. DMG/NET features indirect command file processing, password protection on any destination, excellent error recovery and reporting, alternate-path capability, and an on-line help facility.

An easy-to-use operator interface allows nontechnical users to access a variety of computers interactively and to transfer files to/from remote systems. DMG/NET uses standard DIGITAL ASYNC ports and standard DIGITAL operating systems and interfaces with most other computers, including micros.

Networks can be a mix of direct (EIA) connections, leased lines with modems, autodial units, and X.25 packetizers (PADS). Between compatible DIGITAL computers, full file-transfer capability includes error checking and support for RMS, binary, WORD-11, USER-11, and other file formats. To/from non-DIGITAL computers, transfers are ASCII only. Virtual terminal access to any system with ASYNC or X.25 ports is possible.

Single CPU, rentals, and corporate licensing are available.

A version of this product is available for VAX computers.

Price: \$2000 +

Contact: Digital Management Group Ltd.
(416) 225-7788

DIGITAL MANAGEMENT GROUP LTD.
4800 Yonge Street
Willowdale, Ontario M2N 6G5 Canada

DN-11 Device Driver for RSX-11**PDP-11 Operating System:** RSX**Keywords:** • Device drivers/handlers • Source code control

The DN-11 Device Driver supports autocall procedures under RSX-11M. The driver is implemented as a user-written nonloadable driver and supports only one physical device with a maximum of four output ports.

The driver must use the standard CSR addresses recommended by DIGITAL. The four modules are serviced by a common interrupt vector in system floating vector space (starting at 300). You can select the vector to be implemented by changing the interrupt vector field in the status control blocks located in the USRTB.MAC module supplied in the furnished kit.

The DN-11 kit includes source files for the driver; the conditional DN-04 needs to be satisfied, which can be accomplished by using the supplied indirect assembly file. DECUS number 11-562.

Note: The command files for assembly do not have related source files.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

DN-11 Driver for RSTS/E Version 7.0

PDP-11 Operating System: RSTS

Keywords: • Device drivers/handlers • Networking
• Telecommunications

Memory required: 1K.

This handler permits a user to dial telephone calls over the direct-dial network under program control. Then the telephone line is switched over to a modem for data exchange with the called party. Typically, a DN-11 is connected to an 801A6 automatic calling unit (ACU), and a DL11D is connected to a 103A3 modem. In that configuration, the DN-11 and 801 control outward dialing of calls, and the DL11D and 103 conduct the data exchange. The data exchange occurs as normal input and output over the "KB" line corresponding to the DL11D.

The DN-11 only establishes the connection between the local and remote devices. The local device completes the connect sequence. The DN must be used on a device with a line control interface equivalent to the DL11D. DECUS number 11-580.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

DPM (Distributed Plant Management)

PDP-11 Operating System: RSX

Keywords: • Data base management • Device drivers/handlers
• Diagnostics

DPM software is provided for PDP-11 host systems running under the RSX-11M operating system. DPM allows user-written tasks in a DPM host to communicate through the DECdataway with multidropped devices connected to the DPM host.

DPM hosts control the DECdataway through the DECdataway controller driver software, which provides a standard RSX-11M QIO interface for tasks written in MACRO, FORTRAN IV, or FORTRAN-77. The DECdataway controller driver software allows processing of concurrent I/O from multiple tasks and multiple DECdataways. DECdataway controller software also includes separate tasks that initialize each DECdataway controller at system startup, log DECdataway errors to an error file, and format and print the contents of the error file.

DECdataway devices fall into two classes: Factory Data Management (FDM) terminals and DECdataway Intelligent Subsystems. Supported FDM devices include the RT801, RT803, and RT805 terminals; the DPM01 DECdataway multiplexer; the VT110 terminal/multiplexer;

and the DYT01 serial line interface. The DECdataway Intelligent Subsystems include the DECdataway DPM50 I/O Subsystem and the DPM23 programmable DECdataway Subsystem.

Factory Data Management (FDM) software provides a set of utility routines, support tasks, and a dispatcher package that simplify the implementation of data collection and data management with FDM terminals in the factory environment. The DPM DECdataway Intelligent Subsystems software allows application programs to execute in a remote subsystem under RSX-11S and to communicate through the DECdataway to tasks in a DPM host system.

Refer to SPD #15.06.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

DPM-PLUS (Distributed Plant Management)

PDP-11 Operating System: RSX

Keywords: • Data base management • Device drivers/handlers
• Diagnostics

DPM-PLUS software is provided for PDP-11 host systems running under the RSX-11M-PLUS operating system. Distributed Plant Management software allows user-written tasks in a DPM host to communicate through the DECdataway with multidropped devices connected to the DPM host.

DPM-PLUS Software hosts control the DECdataway through the DECdataway controller driver software, which provides a standard RSX-11M-PLUS QIO interface for tasks written in MACRO, FORTRAN IV, or FORTRAN-77. The DECdataway controller driver software allows processing of concurrent I/O from multiple tasks and multiple DECdataways. DECdataway controller software includes separate tasks that initialize each DECdataway controller at system startup, log the DECdataway controller to an error file, and format and print the contents of the error file.

The two classes of DECdataway devices are Factory Data Management (FDM) terminals and DECdataway Intelligent Subsystems. Supported FDM devices include the RT801, RT803, and RT805 terminals; the DPM01 DECdataway multiplexer; the VT110 terminal/multiplexer; and the DYT01 serial line interface. The DECdataway Intelligent Subsystems include the DECdataway DPM50 I/O Subsystem and the DPM23 programmable DECdataway Subsystem.

FDM software provides a set of utility routines, support tasks, and a Dispatcher Package that simplify the implementation of data collection and data management with FDM terminals in the factory environment. The DPM DECdataway Intelligent Subsystems software allows application programs to execute in a remote subsystem under RSX-11S and to communicate through the DECdataway to tasks in a DPM host system.

Refer to SPD #15.11.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

DR11-A/C Loadable Driver with Build Package

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers • Source code control

Memory required: 3250(octal) bytes.

The DR11-A/C Loadable Driver allows a user to access up to 16 DR11-A or DR11-C general device interfaces using standard QIO procedures under an RSX-11M Version 3 mapped system. The driver supports read, write, attach, detach, and interrupt requests. Interrupts are realized by the setting of event flags in the task, thereby eliminating the need for the user to handle the interrupt.

A build package consisting of all sources for the driver and a command build file, a set of sources for FORTRAN IV-callable routines to control the driver, and full documentation are included. DECUS number 11-352.

Restrictions: Loadable driver support and associated Exec routines are required.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

DRU11-C RSX-11 Driver

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers

The DRU11-C device driver supports the DRU11-C (UNIBUS) interface under the RSX-11M, RSX-11M-PLUS, and RSX-11S operating systems. The DRU11-C is a general-purpose parallel interface between the UNIBUS and a user's peripheral. The device performs Direct Memory Access (DMA) controlled block transfers of 16-bit data between a PDP-11 processor and an external device. Multiple blocks of data can be transferred, without the need for new DMA parameters, by means of hardware-controlled switching of alternate buffers in the processor's memory.

The driver enables the user to communicate with the interface by using the \$QIO system service, which is callable from MACRO, FORTRAN, and other high-level languages.

DRU11-C features support of data transfer requests in DMA mode, support of programmed single-word transfers, function/status bit control services, device status information, event recognition services, and data path selection.

Refer to SPD #13.35.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$400 – \$1200

Contact: Consult your local DIGITAL sales office (see Introduction).

DRX11-C/RSX Driver

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers

This device driver enables users to access the DRU11-C/DRQ11-C double-buffer DMA interface. The DRU11-C is designed for UNIBUS-based systems; the DRQ11-C, for Q-bus-based systems. Tasks written in MACRO-11 or FORTRAN can communicate with the hardware interface under the RSX-11M/S, RSX-11M-PLUS, or Micro/RSX operating system. This version is available in Europe only.

DRX11-C supports up to eight interfaces, word transfer, single- and multiple-block transfer, the reading and writing of status and function bits, special interrupt processing, and QIO interface.

Refer to SPD #12.72.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

DT07-11M/M-PLUS

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers

DT07-11M/M-PLUS allows the RSX-11M or RSX-11M-PLUS operating system user to electronically connect a section of switchable UNIBUS, with all attached peripherals, to the user's system. The software consists of a driver and a bus switch manager. The driver maintains control of the DT07, monitors its activities, supports the connect and disconnect functions, and handles associated system-level housekeeping tasks for each processor. The bus switch manager provides a link between the user and the DT07 driver and also maintains information about users who are using the switched UNIBUS and the status of operations performed in controlling the switched UNIBUS.

In addition to the connect and disconnect functions, DT07-11M/M-PLUS supports automatic failover of switched peripherals to a back-up CPU upon failure of the connected CPU, automatic disconnect of the DT07 upon CPU switched. UNIBUS power failure, update of the on-line/off-line status of all switched peripheral drivers after each DT07 switching operation in both manual and programmable modes, console and error log reporting of all switching activities and DT07 status changes, a session control capability to facilitate resource sharing, and security protection against unauthorized switching by way of DT07 software-assignable privilege levels.

Refer to SPD #14.36.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$360 – \$900

Contact: Consult your local DIGITAL sales office (see Introduction).

DUPLEX — Serial Communication Between Computers

PDP-11 Operating System: IAS, RSX

Keywords: • File transfer • Networking

DUPLEX enables two computers to talk to each other over serial lines while giving the user access to file facilities. DUPLEX makes a PDP-11 running RSX-11M appear to be a smart terminal. However, the combination of being able to talk to two or more computers from one terminal and of being able to transfer files to and from each computer in a clean and simple fashion is extremely powerful and convenient. The "poor man's DECnet" gives access to peripherals on both machines for anything that can be transmitted over a serial line. DECUS number 11-456.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

DV11/3271 Driver for RSX-11M V3.0

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers • Networking

Memory required: 24KW (driver uses 3.8KW).

The DV11 Driver permits the attachment of IBM 3270 or equivalent terminal equipment to PDP-11s. Support is provided for multidropped IBM 3271 or 3275 information display systems on leased or private synchronous communication facilities. Through the use of this driver and an appropriately coded application program, 3271 subsystems see no difference in protocol or operation from the usual configuration with an IBM 360/370 mainframe and 270X/370X Transmission Control Unit.

The system provides easy-to-use input/output directives that perform all basic functions necessary to communicate with multiple 3270 display systems on multiple communication lines. The system is implemented as a single RSX-11M executive-resident driver module; no operating system changes are required. A system generation is necessary to install the driver. All 3270 programming is the responsibility of the user, who must construct appropriate 3270 data streams, including the proper command codes, orders, attribute characters, and text. The driver will not generate or modify such data other than for code translation purposes. DECUS number 11-487.

Restrictions: The driver does not run under RSX-11M on some systems configured with extended memory unless modified up to the proper revision level of RSX-11M.

Note: This package supports the 3270 or equivalent hardware: 3271 model 1 or 2 on a leased or private full- or half-duplex communication line facilities through appropriate Bell-series 200 or equivalent modems, IBM 3275 remote or stand-alone terminal in a polled mode, up to 32 IBM 3277 model 1 or 2, 3284 or 3286 terminals on each control

unit, up to 32 control units can be dropped on each line. Support is provided for up to four DV11 interfaces, transmission speed of up to 9600 bps a line, and both EBCDIC or ASCII codes.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

DX/11M

PDP-11 Operating System: RSX

Keywords: • Asynchronous communication • Diagnostics
• Printing • Word processing

DX/11M makes asynchronous communication possible between an RSX-11M host and a current WPS-8 Word Processing System. Communication between the RSX-11M system and the WPS-8 system uses the DX error-correcting protocol. The WPS-8 system appears to the host application programs to be a normal terminal.

DX/11M effectively enables distributed stand-alone WPS-8 systems and the host RSX-11M real-time multiprogramming system to be linked for better system utilization and data sharing. The DX/11M package includes utility programs that convert RSX-11M files stored in word processing format to RSX-11M files stored in ASCII format, and vice versa.

DX/11M enables the WPS-8 system user to:

- Store word processing format files on an RSX-11M system and later retrieve them. The ability to use the RSX-11M disk structure enables the WPS-8 system user to access a large number of documents that would otherwise fill several document diskettes.
- Use the high-speed PDP-11 line printer connected to the RSX-11M system to print rough drafts and other documents not requiring letter-quality printing. That increases system throughput and the availability of the WPS-8 letter-quality printer for printing final drafts. In addition, the RSX-11M system user can output text files converted from the RSX-11M file system on the WPS-8 letter-quality printer.
- Use the WPS-8 editor to create RSX-11M source language and data files off line from the RSX-11M system and then transmit the files to the RSX-11M system for processing.

Refer to SPD #10.96.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$510 - \$1450

Contact: Consult your local DIGITAL sales office (see Introduction).

DX/RSTS

PDP-11 Operating System: RSTS

Keywords: • Asynchronous communication • Diagnostics
• Printing • Word processing

DX/RSTS, a software package executing on the PDP-11 RSTS/E time-sharing system, makes asynchronous communication possible

between a RSTS/E host and a current WPS-8 Word Processing System. Communication between the RSTS/E system and the WPS-8 system uses the DX error-correcting message protocol. The WPS-8 system appears to the host application programs to be a normal terminal.

DX/RSTS effectively enables distributed stand-alone WPS-8 systems and the host RSTS/E time-sharing system to be linked for better system utilization and data sharing. The DX/RSTS package includes utility programs that convert RSTS/E files stored in word processing format to RSTS/E files stored in ASCII format and vice versa.

DX/RSTS enables the WPS-8 system user to:

- Store word processing format files on a RSTS/E system and later retrieve them. The RSTS/E disk structures enable the WPS-8 system user to access a large number of documents that would otherwise fill several document diskettes and those large documents filling an entire diskette.
- Use the high-speed PDP-11 line printer connected to the RSTS/E system to print rough drafts and other documents not requiring letter-quality printing. That increases system throughput and the availability of the WPS-8 letter-quality printer for printing final drafts. Conversely, the RSTS/E system user can output text files converted from the RSTS/E file system on the WPS-8 letter-quality printer.
- Create RSTS/E source language and data files off line from the RSTS/E system, using the WPS-8 editor, and then transmit the files to the RSTS/E system for processing.

Refer to SPD #10.95.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$510 - \$1450

Contact: Consult your local DIGITAL sales office (see Introduction).

Ethernet Terminal Server

PDP-11 Operating System: RSX

Keywords: • Networking

This network terminal switch for Ethernet local area networks provides up to 32 asynchronous, EIA RS-232-C/CCITT V.24/V.28 port connections to DIGITAL asynchronous terminals, as well as the capability to connect to other hosts that do not support the LAT protocol, DIGITAL personal computers, printers, and modems. Once the terminal is connected, the user can use local applications programs and utilities as though the terminal were directly connected to that host through a DZ11 or DMF32 device. From an applications program, the host cannot initiate connections to devices on the Terminal Server.

The Terminal Server uses the Local Area Transport (LAT) protocol for communication with service nodes that support this protocol on the same Ethernet. The protocol provides high terminal I/O performance over an Ethernet while reducing host CPU cycles required to handle interrupts.

The Terminal Server also provides access from the Ethernet to one or more host systems with EIA RS-232-C/CCITT V.24/V.28 interfaces for systems not directly connected to the Ethernet or for systems that do not support the Terminal Server protocol. Any terminal connected to any of DIGITAL's terminal servers can access a system through the EIA RS-232-C/CCITT V.24/V.28 interface.

Refer to SPD #30.35.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for VAX computers.

Price: \$550

Contact: Consult your local DIGITAL sales office (see Introduction).

ETHERWAY™

PDP-11 Operating System: RSX

Keywords: • Networking

ETHERWAY provides DECnet support for an Ethernet Local Area Network. A system running ETHERWAY and standard DECnet software while using an Interlan NI1010 UNIBUS or NI2010 Q-bus controller can communicate with other ETHERWAY systems over an Ethernet network. The ETHERWAY systems appear on a DECnet network as standard DECnet nodes. Users on the ETHERWAY nodes are provided with DECnet remote login, task-to-task communication, and network management.

A version of this product is available for VAX computers.

Price: \$2500 +

Contact: Gigi C. Wang
(617) 443-7311

TECHNOLOGY CONCEPTS, INC.
Old County Road
Sudbury, MA 01776

European MINC Package #6 — Communication

PDP-11 Operating System: RT-11

Keywords: • Networking

The programs in this package are MINC to MINC, a serial link; MINC to HOST, a program that connects MINC to PDP-11 (RSX-11M or VAX/VMS); TERCOM, a terminal communication; PDPSJ.SAV, a communication link between RT-11 (MINC) as a transparent console; and LOGIN, a facilities and automatic console selection in an RT-11 multi-terminal system. DECUS number 11-577.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

EXFILE (Exchange File Program)

PDP-11 Operating System: RT-11

Keywords: • File management • File transfer
• Software utilities

Memory required: 12K.

This general utility allows any two computer systems to exchange files by means of serial interfaces. Any type of file is transferable, and either system can be the master or the slave during the transfer. DECUS number 11-415.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

EXOS 8031 (Excelan Open Architecture Systems)

PDP-11 Operating System: RSX

Keywords: • File transfer • Networking • Software utilities

Memory required: 128K.

This product implements DOD standard ARPANET TCP/IP protocols to connect Q-bus-based DIGITAL PDP-11 or LSI-11 minicomputers running RSX-11M to Ethernet networks. The software, written in C, aids in developing advanced distributed systems based on standard building blocks.

Combined with Excelan's EXOS Ethernet front-end processor, the EXOS 8031 software forms a complete, self-contained, single-board LAN subsystem. The system implements ISO network and transport layers on a front-end processor. This decoupling of network software from the host operating system frees the host CPU and memory for other work. Furthermore, off-loaded, dedicated protocol processing increases network throughput, facilitates integration and maintenance, and permits flexibility for product evolution.

The software package components are organized into the TCP/IP Protocol Module and the Host Utilities and Integration Kit. The TCP/IP Protocol Module runs on the EXOS Ethernet front-end processor, independently of the host operating environment, and handles network protocol processing. The Host Utilities and Integration Kit runs on the host system and consists of an I/O driver, application programming interface, network administration utilities, and network application utilities (file transfer and virtual terminal connection).

Price: \$1645

Contact: Sales Department
(408) 434-2300
EXCELAN, INC.
2180 Fortune Drive
San Jose, CA 95131

EXOS 8032 (Excelan Open Architecture Systems)**PDP-11 Operating System:** RSX**Keywords:** • File transfer • Networking • Software utilities

Memory required: 128K.

This product implements DOD standard ARPANET TCP/IP protocols to connect UNIBUS-based DIGITAL PDP-11 minicomputers running RSX-11M to Ethernet networks. The software, written in C, aids in developing advanced distributed systems based on standard building blocks.

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Price: \$1645**Contact:** Sales Department
(408) 434-2300EXCELAN, INC.
2180 Fortune Drive
San Jose, CA 95131**FTALK****PDP-11 Operating System:** RT-11**Keywords:** • Disk utilities • Down-line loading

Memory required: 3KW.

FTALK links a software development PDP-11 computer to an SBC 11/21 (FALCON) computer used in dedicated applications. This program allows a user to down-load stand-alone programs from any mass-storage device existing on a PDP-11 computer to the FALCON. FTALK also allows one terminal to communicate to both the PDP-11 and the FALCON. DECUS number 11-657.

Price: \$5 - \$225**Contact:** DECUS (see Introduction)

FTP (TCP/IP File Transfer Program)

PDP-11 Operating System: IAS, RSX

Keywords: • File management • File transfer • Networking

The package can be used in any application that requires the transfer of files or information from one computer system to another. FTP uses the TCP/IP standard to transfer files. FTP operates with the DEUNA or DEQNA Ethernet network controllers, as well as with the proNET token ring network controllers manufactured by Proteon, Inc., of Natick, MA.

FTP transfers files both to and from other network computer systems that also support the TCP/IP FTP standard, such as UNIX* and ULTRIX systems. File transfer operations can be initiated by user requests or automatically with indirect command files.

* UNIX is a trademark of AT&T Bell Laboratories.

Price: \$2000 - \$4000

Contact: Phil Denzer
(413) 549-6994

PROCESS SOFTWARE CORP.
35 Montague Road, P.O. Box 746
Amherst, MA 01004

FUSION™

PDP-11 Operating System: ULTRIX-11

PRO Operating System: PRO/VENIX™

Keywords: • File transfer • Networking

FUSION Ethernet software provides complete access to the programs, files, and computing power of a remote computer system. Using file-transfer commands, a user can transport groups of files or complete directory hierarchies between previously incompatible processors. With the virtual-terminal function, a user can remotely log on to another system, executing commands as though connected by a local terminal. The network-management functions monitor network performance and isolate faults. The network utilities allow for mail and print service and distributed command execution. In addition, any system can be designed as a file or a print server for access by other systems on the FUSION network.

Vendor-independent FUSION can interconnect various computers, operating systems, and local area network (LAN) hardware components. FUSION can link PDP-11, VAX, 68000, 8086, IBM-PC, and PC-compatible processors on the same Ethernet network while crossing UNIX,* UNIX*-like, VMS, and MS-DOS operating system boundaries. Network hardware is available from DIGITAL, 3Com, Interlan, Excelan, Communication Machinery Corp., and Univation. Data transfer rates exceed one million bits a second, making FUSION 2 to 20 times faster than comparable software packages.

FUSION customers include end users and major manufacturers. Print server and file server capabilities serve budget-minded research and office environments. OEMs bundle FUSION into their own systems, enhancing their products by providing high-performance software to prospective customers.

VENIX™ is a trademark of VenturCom, Inc.

A version of this product is available for VAX computers.

Price: \$750 – \$6000

Contact: Sales Department
(213) 394-7200

NETWORK RESEARCH CORP.

2380 North Rose Avenue
Oxnard, CA 93030

GOULD/DEC Data Link

PDP-11 Operating System: RSX

Keywords: • Asynchronous communication • File transfer
• Networking

The GOULD/DEC Data Link provides high-speed communications between any Concept 32-series computer running MPX 2.x or 3.x software and any PDP-11, LSI-11, or VAX computer running RSX-11 or VMS software. The basic link supports Gould and DIGITAL system tasks that can exchange data using standard read/write calls. Those tasks specify IDs or task names to identify the tasks with which data should be exchanged. When multiple requests are pending, transfers are given precedence according to the I/O priority assigned to the Gould task.

The GOULD/DEC Data Link permits Gould tasks to access DIGITAL peripherals and executive functions. To Gould users, the DIGITAL peripherals appear as if they were connected to the Gould computer.

DIGITAL tasks can also access Gould peripherals, executive functions, and files. Gould peripherals appear to the DIGITAL user as if they were connected to the DIGITAL computer. Gould files can be accessed by the DIGITAL user in the same way as DIGITAL files, and the contents are automatically translated to DIGITAL file format. Gould binary or ASCII files can thus be read or written to/from magnetic tapes in DIGITAL formats, using tape drives connected to either the Gould or the DIGITAL computer. Terminals connected to either the DIGITAL or the Gould computer can be used to log on either computer.

With the Q-NET product, the Gould computer becomes part of DECnet, with all its file transfer, data transfer, and remote log-on facilities.

The link hardware consists of a Gould HSD Interface, a control logic card, and a DIGITAL Q-bus- or UNIBUS-compatible DMA Interface. Cable lengths up to 250 feet are supported with the standard drivers.

Optional drivers allow cable lengths up to 1000 feet. Raw transfer rates are up to 700KB for Q-bus and 1000KB for UNIBUS.

A version of this product is available for VAX computers.

Price: \$14,790 – \$21,220

Contact: Wayne R. Fox
(615) 482-6649

SCIENCE APPLICATIONS INTERNATIONAL CORP.

152 Fairbanks Road
Oak Ridge, TN 37830

GVS/File

PDP-11 Operating System: Micro/RXS, RSX, RT-11

Keywords: • Asynchronous communication • File transfer
• Telecommunications

This utility transfers files over a telephone line (or a direct RS-232 link) between two PDP-11s or between a PDP-11 and another computer with compatible software. To communicate with another computer, you run LOCAL to turn the PDP into a virtual terminal; that is, characters typed on the terminal running LOCAL are channeled through the communications port to the remote computer and vice versa. In order to begin a file transfer, the REMOTE program is invoked on the remote computer and given the file names in a format similar to the PIP command. Many files can be transferred in one command by using an indirect command file containing their names.

Text files and 512-byte record data files can be sent in either direction by specifying appropriate switches in the REMOTE command line. During the transfer, the number of packets transferred can be displayed. The protocol uses packet sequence numbers, a Longitudinal Redundancy Check (LRC), and retransmission of packets when necessary to ensure data integrity even on noisy telephone lines.

Genesys Group can also provide equivalent software for the HP-1000 and the Apple II, which supports transfer of files from these machines to the PDP-11.

Price: \$750

Contact: Val Smith
(613) 226-8740

GENESYS GROUP INC.

1775 Courtwood Crescent
Ottawa, Ontario K2C 3J2 Canada

HASP

PDP-11 Operating System: IAS, RSX, RT-11, TSX-PLUS™

Keywords: • Networking • Software utilities

This generalized communications package, installed as a system utility, can operate as an emulator of any standard HASP multileaving workstation (RJE mode) or as a host to other workstations (host mode).

The protocol uses bidirectional communications and automatic character compressions to provide line efficiencies that are not available with the 2780 or the 3780 packages. Full support is provided for an operator console and the maximum concurrent mix from each of seven input, print, and punch streams. HASP requires a DU-11, DUV-11, DPV-11, DUP-11, or DMF-32; optional hardware supported includes KG-11 and DN-11.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$1995 - \$5500

Contact: Sales Department

(301) 864-3700

GEJAC, INC.

P.O. Box 188

Riverdale, MD 20737

HASP COMBOARD™

PDP-11 Operating System: RSTS, RSX

Keywords: • Data conversion • Device drivers/handlers
• Pre- and postprocessors • Source code control

COMBOARD, a front-end data communications processor that plugs directly into the PDP-11 UNIBUS, is a hex-height module using a 16-bit microprocessor, providing speeds up to 56 kilobytes/sec. Software is HASP protocol and has interfacing utilities for RSTS/E, RSX-11M/M+, and all UNIX* systems. A device driver is also included. HASP protocol emulator runs directly on the COMBOARD, and all other I/O software runs in the DIGITAL host. The price includes source code to all but the HASP emulator.

A version of this product is available for VAX computers.

Price: \$13,900 - \$26,900

Contact: Bill Martin

(800) 772-3282

SOFTWARE RESULTS CORP.

2887 Silver Drive

Columbus, OH 43211

HASP + RSX-11M/RSX-11M-PLUS Interconnect Software

PDP-11 Operating System: Micro/RSX, RSX

Keywords: • File transfer • Networking • Software utilities
• Telecommunications

HASP+ is an easy-to-use, low-overhead, and cost-saving communications software package for interfacing the PDP-11s and MicroPDP-11s to IBM, CDC, HP, Cybernet, Honeywell, and other computer systems. HASP+ can be run in either host or remote mode.

HASP+ can be easily installed and maintained by the user's data processing personnel. HASP+ supports autodial multiple sites from a

1308 Systems Communications

single queue and route-back to each user's disk area and can be easily made into a gateway system for a DECnet network. HASP+ also uses standard DIGITAL hardware.

HASP+'s concurrent multiple, bidirectional data streams and efficient character compression makes it the most efficient RJE/file transfer protocol available. HASP+ has a worldwide user base of more than 1300. The product is sold on a 30-day, no-risk acceptance basis.

Price: \$3000 - \$4000

Contact: Skip Berlin

(503) 687-2520

DATANEX, INC.

P.O. Box 1728

Eugene, OR 97440

HASP+ RT-11 and TSX-PLUS Interconnect Software

PDP-11 Operating System: RT-11, TSX-PLUS™

Keywords: • File transfer • Networking • Software utilities
• Telecommunications

HASP+ is an easy-to-use, low-overhead, and cost-saving communications software package for interfacing PDP-11s to IBM, CDC, HP, Cybernet, Honeywell, and other computer systems. HASP+ can be run in either host or remote modes.

HASP+ can be easily installed and maintained by the user's data processing personnel. HASP+ supports autodial, multiple sites from a single queue, and route-back to each user's disk area and can be easily made into a gateway system for a DECnet network. HASP+ also uses standard DIGITAL hardware.

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TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$1500 - \$2500

Contact: Skip Berlin

(503) 687-2520

DATANEX, INC.

P.O. Box 1728

Eugene, OR 97440

HP.SYS: Hewlett-Packard 7470A Plotter Handler

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers • Mapping

Memory required: 402(decimal) words.

HP.SYS, used in an RS-232 environment with XON/XOFF handshaking protocol, is implemented on the MINC RT-11 system. HP.SYS, a read/write handler, is useful for digitizing or communicating with the

plotter. Since most laboratory devices use XON/XOFF protocol, the handler might be easily modified for such devices. DECUS number 11-595.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

IAS/2780 Protocol Emulator

PDP-11 Operating System: IAS

Keywords: • File management • File transfer

This emulator provides batch-oriented communication between a PDP-11-based IAS system and an IBM 360/370 or 303x host processor. The emulator supports the exchange of data between DIGITAL and IBM systems by emulating the communications protocol of an IBM 2780 remote batch terminal on a suitably configured IAS Version 3.1 system. The IAS system appears as an IBM 2780 remote batch terminal on a point-to-point switched or nonswitched data link to an IBM system running the appropriate Remote Job Entry protocols.

The IAS user can build data files, using the IAS Editor, other system facilities, or IAS application programs. The user can then activate the IAS/2780 program and transmit files to the remote facility, using simple interactive commands. Data received from the remote facility can be delivered directly to the line printer or can be written to a disk storage device in standard IAS file format. Output from jobs submitted to the remote system can be received by a specified device, where they are stored under a user-defined file specification or are given a default file name and version number.

Any disk device accessible through IAS Files Control System (FCS) can be used as a source or sink of data to be transmitted or received. Files can be printed directly onto any line printer supported by the IAS host operating system except the LS11 and LV11 printers. Files destined for the LS11 or LV11 can be stored temporarily on disk and printed in off-line mode.

The communications discipline implemented by the IAS/2780 Protocol Emulator is the subset of IBM's Binary Synchronous Communications (BSC) protocol, which uses EBCDIC transmission code and point-to-point contention. BSC control characters are automatically added to the data before transmission and stripped upon reception. Line protocol and error recovery sequences are handled transparently by the product.

Both fixed-length (80-character card image) and variable-length (up to 132-character) records can be transferred as either EBCDIC (automatically translated to and from ASCII) or binary data. A subset of vertical format control escape sequences is supported — specifically, single, double, and triple space and form feed. Horizontal-format control records can be received and processed.

The following 2780 remote batch terminal features are supported: 2780 multiple-record transmission option, transparent mode, variable

1310 Systems Communications

horizontal forms control, print and punch component selection on receive, and spooling of received files. The emulator supports the operation of a single, full- or half-duplex synchronous point-to-point line at transmission speeds up to 4800 bits a second. Support for automatic answer to incoming calls is also supported.

Refer to SPD #10.90.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$80 – \$6680

Contact: Consult your local DIGITAL sales office (see Introduction).

IBM 2780/3780

PDP-11 Operating System: RSX

Keywords: • Networking • Telecommunications

This communication subsystem for UNIBUS-based computers provides data transfer by means of a DMA facility and dual-host support.

A version of this product is available for VAX computers.

Price: \$8000

Contact: Mogens Poulsen

01-20 00 66

A/S DATALOG

Rygaards Alle 104

DK-2900 Hellerup Denmark

IBM 3270

PDP-11 Operating System: RSX

Keywords: • Networking • Telecommunications

This subsystem for UNIBUS-based computers includes a DIGITAL multiplexer from 8 to 32 channels, DMA data transfer, dual-host support, and full-screen buffer facility emulating IBM 3277 terminals on a VT100 terminal.

A version of this product is available for VAX computers.

Price: \$11,500

Contact: Mogens Poulsen

01-20 00 66

A/S DATALOG

Rygaard Alle 104

DK-2900 Hellerup Denmark

IBM HASP

PDP-11 Operating System: RSX

Keywords: • Networking • Telecommunications

IBM HASP, a communication subsystem for UNIBUS-based computers, provides data transfer by way of a DMA facility and dual host support.

Price: \$8500

Contact: Mogens Poulsen
01-20 00 66

A/S DATALOG
Rygaards Alle 104
DK-2900 Hellerup Denmark

IBM-SDLC/HDLC-UNC

PDP-11 Operating System: RSX

Keywords: • Networking • Telecommunications

The IBM-SDLC, a communication subsystem for UNIBUS-based computers, provides data transfer by way of a DMA facility and supports half-duplex IBM-SDLC link-level protocol (ISO HDLC unbalanced operation, normal response mode) in firmware. Data throughput exceeds 64K bps.

Price: \$8000

Contact: Mogens Poulsen
01-20 00 66

A/S DATALOG
Rygaards Alle 104
DK-2900 Hellerup Denmark

IBMmvs/DECnet Gateway

PDP-11 Operating System: RSTS, RSX

Keywords: • Data conversion • File transfer
• Information management

Interlink's IBMmvs/DECnet Gateway combines an intelligent front-end communications processor linked to an IBM system through a high-speed data channel with sophisticated IBM host-resident software developed by Interlink. The software includes features that enable DECnet users to submit/retrieve batch jobs to/from IBM/mvs systems directly from a DECnet node, provides DECnet users with single-command access to the IBM print queue without having to wait for a turn in the batch stream, and allows for directory lookup of data set names in the IBM/mvs catalog in DIGITAL-compatible ways.

The IFT utility gives IBM users access to DIGITAL files, using TSO/ISPF (menu-driven screens), a TSO processor, or batch. Just as DIGITAL users can access IBM data sets without having to learn JCL, the IBM user can access DIGITAL files without having to learn DCL.

This system operates at level 7 of the ISO networking model, providing application program-to-application program communications. Other features of this intelligent communication system include high-speed file transfer; file access at the record level; data security, using ACF and RACF; error message correlation and translation; and transparent data translation of all data types, including character, binary, floating point, numeric string, packed decimal, and so on.

1312 Systems Communications

The system is based on a PDP-11/23 processor or optional PDP-11/73 with 512K bytes of RAM, 10MB Winchester disk, and dual 5¼" diskettes.

A version of this product is available for VAX computers.

Price: \$85,000 – \$115,000

Contact: Bob Schinlever

(415) 792-6212

INTERLINK COMPUTER SCIENCES, INC.

39055 Hastings Street, Suite 203

Fremont, CA 94536

IBV-11A FORTRAN Support Package

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers

This software provides FORTRAN support for the IBV-11A interface for the IEEE bus. RT-11 Version 2C with FORTRAN is required. DECUS number 11-317.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

IEC11-M

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers

The IEC11-M Device Drivers allow programs written in MACRO-11, FORTRAN, and BASIC to communicate with IEEE STD. 488 devices connected to the IEC11-A and IEC11-B. This communication is implemented through a choice of direct QIO calls to the executive or a set of subroutines callable from high-level languages.

The IEC11-A and IEC11-B are digital input/output interfaces for the IEEE STD. 488 (1978) Programmable Interface Bus System, also known as the General-Purpose Interface Bus (GPIB). The interface boards are compatible with both ANSI MC 1.1 and IEC 625.1 standards.

The IEC11-A is an interrupt-driven interface with full IEEE-488 control capabilities. The IEC11-B is a DMA option that significantly reduces processor loading for long messages when acting as an IEEE-488 talker or listener. Software support of those devices consists of independent drivers that support up to eight IEC11-As and eight IEC11-Bs on a single PDP-11. Each interface can be on the same or on different IEEE-488 buses, up to the limits specified in IEEE STD. 488.

Refer to SPD #14.64.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$250 – \$1200

Contact: Consult your local DIGITAL sales office (see Introduction).

IEX-RSX-Driver**PDP-11 Operating System:** Micro/RXS, RSX**Keywords:** • Device drivers/handlers

The IEX-RSX device drivers allow programs written in MACRO-77, FORTRAN IV, FORTRAN-77, and BASIC-PLUS-2 to communicate with IEEE Standard 488 devices connected to the IEQ11-A or IEU11-A. That communication is implemented through direct QIO calls to the executive. The IEQ11-A and IEU11-A are digital input/output interfaces for the IEEE Standard 488 (1978) Programmable Interface Bus System, also known as the General-Purpose Interface Bus (GPIB). The interfaces are compatible with both ANSI MC 1.1 and IEC 625.1 standards.

The IEQ11-A and IEU11-A both generate two interfaces to any Q-bus (16-, 18-, or 22-bit) or UNIBUS PDP-11 system, respectively. The interfaces have full IEEE-488 control capabilities and DMA (Direct Memory Access) interfacing to the processor bus, which significantly reduces processor loading for long messages when acting as an IEEE-488 talker or listener. The IEEE-488 bus interfaces thus created are totally independent and can be parts of the same or different IEEE-488 buses.

Refer to SPD #12.68.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$400 - \$900**Contact:** Consult your local DIGITAL sales office (see Introduction).**IEX-RT-Handler****PDP-11 Operating System:** RT-11**Keywords:** • Device drivers/handlers

The IEX-RT-Handler software allows programs written in MACRO-11 and FORTRAN to communicate with IEEE Standard 488 (1978) devices connected to the IEQ11-A or IEU11-A. That communication is implemented through a programmed request (SPFUN) to the executive. The IEQ11-A and IEU11-A are digital input/output interfaces for the IEEE Standard 488 (1978) Programmable Interface Bus System, also known as the General-Purpose Interface Bus (GPIB). The interfaces are compatible with both ANSI MC 1.1 and IEC 625.1 standards.

The IEQ11-A and IEU11-A both generate two interfaces to any Q-bus (16-, 18-, or 22-bit) or UNIBUS PDP-11 system, respectively. The interfaces have full IEEE-488 control capabilities and DMA (Direct Memory Access) interfacing to the processor bus, which significantly reduces processor loading for long messages when acting as an IEEE-488 talker or listener. The IEEE-488 bus interfaces thus created are independent.

1314 Systems Communications

The IEX-RT-Handler supports a single IEEE-488 bus interface; therefore, you must install as many copies of the handler, with different names, addresses, and so on, as the number of IEEE-488 bus interfaces that are to be created.

Refer to SPD #12.65.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$200 - \$500

Contact: Consult your local DIGITAL sales office (see Introduction).

IF-11/3780

PDP-11 Operating System: RSTS, RSX

Keywords: • File transfer • Pre- and postprocessors

The IF-11/3780 is a front-end, microprocessor-based 2780/3780 protocol emulator that enables exchange between a PDP-11 minicomputer and one or two devices that expect 2780/3780 protocol. The IF-11/3780 allows standard remote job entry and file transfer and provides access to DIGITAL and DIGITAL-compatible peripheral devices. IF-11/3780 features include support for two IBM host computers; line speed up to 9600 bps; access to all UNIBUS peripherals; multiple IF-11/3780 installations on one PDP-11; protocol conversion between the PDP-11's ASCII and IBM's EBCDIC; 2780/3780 processing, including line interrupts and block checksums; multiple-record transmission and reception; variable- or fixed-length records up to 160 characters long; space compression/expansion where spaces are deleted during 3780 transmission; transmit/receive buffer up to 512 characters long; vertical and horizontal print format control; automatic retransmission and retry; and optional transparent binary data transfer mode.

Price: \$8000 - \$11,000

Contact: Diane Cast
(805) 963-9431

ADVANCED COMPUTER COMMUNICATIONS
720 Santa Barbara Street
Santa Barbara, CA 93101

IF-11/HDLC-X.25 Link-Level Software

PDP-11 Operating System: IAS, RSX

Keywords: • Device drivers/handlers • Networking
• Pre- and postprocessors • Process control

This software package consists of HDLC (X.25 level II) firmware and a device driver for the VMS, RSX, and IAS operating systems. The driver, in conjunction with the HDLC firmware, allows VAXs and PDPs to perform high-speed point-to-point synchronous communication. The driver allows supervisory and data information between VAX and PDP users and the remote end of the communications link through the HDLC firmware.

System software allows users to select frame sizes up to 1027 bytes a frame for custom communication applications.

A version of this product is available for VAX computers.

Price: \$7500 – \$10,000

Contact: David Lawton
(805) 963-9431

ACC
720 Santa Barbara Street
Santa Barbara, CA 93101

IF-11/X.25 Packet-Switched Network Firmware

PDP-11 Operating System: RSTS, RSX

Keywords: • File transfer • Networking
• Pre- and postprocessors

This package contains firmware that implements the 1980 CCITT X.25 Recommendations for the Open System Interconnection Model layers 1, 2, and 3 and a device driver for ACC's IF-11/X.25 front-end processor. The firmware provides X.25 packet and link-level support for DIGITAL hosts to make and receive calls on a packet-switched network. The firmware supports 32 full-duplex switched virtual circuits and can be configured for DTE or DCE operation.

The multichannel device driver provides a command and control interface for data transfers to/from VAX/VMS applications, the IF-11/X.25, and the remote DTE or DCE. The driver uses the standard DIGITAL QIO commands to read/write data.

Users can also select a 256-byte packet option or an ADCCP frame-level protocol to facilitate communications lines with long transmission delays, such as satellite links.

A version of this product is available for VAX computers.

Price: \$10,000

Contact: Michael S. Seto
(805) 963-9431

ADVANCED COMPUTER COMMUNICATIONS
720 Santa Barbara Street
Santa Barbara, CA 93101

IF-11/X.25 PLUS PAD Software and Firmware

PDP-11 Operating System: RSX

Keywords: • Networking • Pre- and postprocessors

This package contains firmware that implements the 1980 CCITT Recommendations X.25, X.3, X.28, and X.29 and a device driver for ACC's IF-11/X.25 PLUS front-end processor. The firmware provides packet assembly/disassembly functions for a DIGITAL host to be accessed by remote asynchronous terminals through an X.25 packet-switched network.

The firmware provides full screen editor functionality for up to 32 remote terminals accessing a DIGITAL host. Thus, remote terminals can run applications as if locally attached to the host. The firmware, in

1316 Systems Communications

conjunction with the ACC IF-11/X.25 PLUS hardware, also can provide PAD support for locally attached terminals to make calls to the X.25 network.

A version of this product is available for VAX computers.

Price: \$9000

Contact: Michael Seto
(805) 963-9431

ADVANCED COMPUTER COMMUNICATIONS
720 Santa Barbara Street
Santa Barbara, CA 93101

Instrument Bus Subroutines

PDP-11 Operating System: RT-11

Keywords: • File transfer • Source code control

IBS consists of a library of FORTRAN-callable subroutines to support the IB11 and IBV11-A interface from an IEEE-488-1978 General-Purpose Instrument Bus, as well as a special device handler called by routines in the library. IBS allows the user to control the IEEE bus through commands that control data transfer through the IB11 or IBV11-A. The user can specify a FORTRAN completion routine that will be entered asynchronously when any device on the IEEE bus asserts the Service Request Bus Line. This software supports the IB11 or IBV11-A as controller-in-charge of all bus activity.

Refer to SPD #12.14.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$100

Contact: Consult your local DIGITAL sales office (see Introduction).

Intercomputer File Transfer Program

PDP-11 Operating System: RT-11

Keywords: • File transfer • Software utilities

Memory required: 20KW.

The three programs provided in this package allow interactive communications between the PDP-11 and any remote computer, including file transfers out of and into the PDP-11. DECUS number 11-732.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

IP11 Industrial I/O Subsystem Software Driver

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers • Mapping

The IP11 driver enables users of IP112, IPV12, DPM23/DPM50, and DYS50 I/O subsystems to access the subsystem hardware and its full complement of I/O module options from tasks written in MACRO-11, FORTRAN IV, FORTRAN-77, and Micro/RSX FORTRAN-77 under the RSX-11M, RSX-11M-PLUS, RSX-11S, and Micro/RSX operating

systems. The driver, supplied and installed separately from the host operating system software, consists of an RSX I/O driver or handler and a package of FORTRAN-callable subroutines.

The IP11 driver features the following:

- Support of up to 10 IP112 subsystems on a single UNIBUS-based PDP-11 CPU.
- Support of up to five IPV12 subsystems on a single Q-bus-based PDP-11 CPU running RSX-11M.
- Access to I/O modules from tasks written in FORTRAN IV, FORTRAN-77, and Micro/R SX FORTRAN by means of a series of callable subroutines based on a superset of the Instrument Society of America (ISA) SP61.1 Standards. Access to I/O modules written in MACRO-11 take place by way of a set of RSX QIO directives.
- Dynamic module address mapping, whereby the user specifies the generic types of I/O modules to be supported.
- Handling of digital interrupts in any of three ways.

Refer to SPD #15.07.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

IXV-11/R SX Driver

PDP-11 Operating System: RSX

Keywords: • A/D, D/A • Device drivers/handlers

The IXV-11 module family is a group of digital and analog input/output interfaces for the LSI-11 bus system (available in Europe only). The IXV-11/R SX Driver allows programs written in MACRO-11, FORTRAN, and BASIC-PLUS-2 to communicate with user devices connected to the IXV-11 modules. That communication is implemented by direct QIO calls to the executive. The driver allows the IXV-11 interface to be either attached to a single task or shared among several tasks.

Refer to SPD #13.34.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

KB Handler

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers

This RT-11 V4.0 device-independent terminal handler can be used in either the foreground or the background mode (but not simultaneously) to read and write to a DL-11-controlled terminal. Conditional code is included for use with 18-bit addressing. Eleven set options are also included to permit configuration of the handler. DECUS number 11-472.

Restrictions: DL-11 lines only.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Kermit-11

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • File transfer

Memory required: 20KW.

This protocol, developed at Columbia University, has been used to implement error-free packet file transfer and communications between computer systems, both mainframe to mainframe and micro to mainframe. This version of Kermit-11 was developed for RSTS/E, RSX-11M-PLUS, RSX-11M, and RT-11.

Kermit-11 runs on RSX-11M Version 4.0 and RSTS/E Version 7.2 as long as the task was built without using RMSRES. To be able to build Kermit on RSTS/E Version 7.2 or RSX-11 Version 4.0, you have to get RMSLIB.OLB and MAC.TSK from RSX-11 Version 4.1 or RSTS/E Version 8.0. Version 2 of RMSLIB is needed for \$SEARCH.\$PARSE, \$RENAME, and \$DELETE. The newest MAC.TSK is needed because of the use of new directives, such as SAVE, RESTORE, and INCLUDE FILENAME/. DECUS number 11-781.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Kermit and CPMUG Grab Bag

PDP-11 Operating System: RSX

Keywords: • Programming tools • Source code control

This program contains a Kermit distribution package for reliable communications over terminal lines among PDP-11, VAX, CP/M-80-based micros, IBM PCs, DEC10s, DEC20s, IBM 370s, and Apple computers. Kermit, developed at Columbia University, appears reliable. CP/M user group software (sources only, no binaries) is included.

For VAX users, an 8080 emulator and CP/M host for VAX/VMS on the Australian VAX SIG '82 DECUS tape are available through the Library, DECUS number V-SP-13, which allows the user to use the packages directly. A replacement for COMLIB in the RSX11M V4 BRU utility allows BRU to be used to already initialized disks under VMS.

No guarantees are made as to the completeness, usability, or quality of the programs on the tape. The material has not been checked or reviewed, and documentation may or may not be included. DECUS number 11-5P-55.

Restrictions: CPMUG files may or may not be complete. You need Kermit or a similar package to move files to CP/M. Any binaries here are useless, and most are deleted.

Note: Some elements have only the HEX files. However, most items are in source.

A version of this product is available for VAX computers.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

KMS11 RSX X.25 LAPB Link-Level Software

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers • Networking

This software/firmware package consists of basic X.25 LAPB link-level firmware for the KMS11-BD/BE or KMS1P-M; a firmware loader, to load the firmware into the KMS11 hardware; an RSX-11 (RSX-11M, RSX-11M-PLUS, or RSX-11S) device driver for a KMS11-BD/BE or a KMS1P-M communication controller; and a demonstration program.

The driver, in conjunction with the X.25 LAPB link-level firmware, allows the RSX-11 user to perform high-speed synchronous X.25 link-level communication in a point-to-point environment. The driver provides the interface for transferring command, control, and data information to/from the RSX-11 user task, KMS11-BD/BE or KMS1P-M X.25 LAPB link-level firmware, and the remote end of the communications line. The KMS11 driver is full duplex and maintains internal queues, enabling the supplied firmware to control eight receive and eight transmit buffers for each line concurrently.

If the user's application runs on a system with 22-bit mapping enabled, a separate partition should contain all buffers. That can be either a common area or a partition in which the task(s) will be installed.

The KMS11-BD/BE and KMS1P-M X.25 LAPB firmware was designed in accordance with the CCITT X.25 LAPB recommendation of November 1980.

Refer to SPD #13.42.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

KMV11-A HDLC Framing Software

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers • Networking

This package consists of basic HDLC/SDLC framing firmware, a firmware loader, and an RSX-11M, RSX-11M-PLUS, or RSX-11S device driver for the KMV11-A programmable communications controller. The driver, in conjunction with the HDLC/SDLC framing firmware, loader, and the KMV11-A hardware, allows the RSX-11M, RSX-11M-PLUS, or RSX-11S user to perform medium-speed synchronous communication in a point-to-point or multipoint environment. KMV11-A HDLC Framing Software was designed according to the specification for HDLC/SDLC frame structure as defined in the ISO 3309 standard.

The driver provides the interface for transfer of command, control, and data information to/from RSX-11M, RSX-11M-PLUS, or RSX-11S; KMV11-A basic HDLC/SDLC framing firmware; and remote end-of-communications line. The KMV11-A driver is full duplex and maintains internal queues, enabling the supplied firmware to control, receive, and transmit buffers at the same time. That feature allows the most efficient use of the device during transmission and reception of data.

Refer to SPD #14.22.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

KMV11 RSX X.25 LAPB Link-Level Software

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers • Networking

This software/firmware package consists of basic X.25 LAPB link-level firmware, a firmware loader, a device driver for a KMV11-A Q-bus communication controller, a demonstration test program, a Trace Dump Module, and a trace interpreter. This package allows the user of the RSX-11M, RSX-11M-PLUS, or RSX-11S operating systems to perform high-speed synchronous communications in a point-to-point environment.

Refer to SPD #13.43.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

KXT11-CA Peripheral Processor Tool Kit/RSX

PDP-11 Operating System: RSX

Keywords: • Debugging • Development tools
• Device drivers/handlers • Programming tools

The KXT11-CA Peripheral Processor Tool Kit supports the use of KXT11-CA Peripheral Processors as slave processors in LSI-11 systems that run RSX-11M-PLUS or RSX-11M in the arbiter CPU. The application on the KXT11-CA(s) can be either MicroPower/Pascal-RSX-based or stand-alone MACRO-11. The Tool Kit facilitates loading and debugging KXT11-CA applications from RSX. The software also provides a driver for communication over the LSI-11 bus between MicroPower application software in the KXT11-CA and the RSX-11M or RSX-11M-PLUS application. (Neither RSX-11M-PLUS nor RSX-11M is supported on the KXT11-CA.)

The KXT11-CA is designed to off-load traditional single-processor LSI-11 systems. Typical uses of the KXT11-CA Peripheral Processor are applications using serial or parallel I/O in real-time environments.

Development of the KXT11-CA Peripheral Processor on-board application can be done with the MicroPower/Pascal-RSX product, which

provides a complete software environment for the development of applications in either Pascal or MACRO-11 assembler language.

Refer to SPD #13.25.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$45

Contact: Consult your local DIGITAL sales office (see Introduction).

KXT11-CA Peripheral Processor Tool Kit/RT-11

PDP-11 Operating System: RT-11

Keywords: • Debugging • Development tools
• Device drivers/handlers • Programming tools

The KXT11-CA Peripheral Processor Tool Kit supports the use of KXT11-CA Peripheral Processors as slave processors in LSI-11 systems that run RT-11 in the arbiter CPU. The application on the KXT11-CA(s) can be either MicroPower/Pascal-RT-based or stand-alone MACRO-11. The Tool Kit facilitates loading and debugging KXT11-CA applications from RT-11. The software also provides a driver for communication over the LSI-11 bus between MicroPower/Pascal-RT application software in the KXT11-CA and the RT-11 application. (RT-11 is not supported on the KXT11-CA.)

The KXT11-CA is designed to off-load traditional single-processor LSI-11 systems. Typical uses of the KXT11-CA Peripheral Processor are applications using serial or parallel I/O in real-time environments.

Development of the KXT11-CA Peripheral Processor on-board application can be done with the MicroPower/Pascal-RT product, which provides a complete software environment for the development of applications in either Pascal or MACRO-11 assembler language. MicroPower/Pascal-RT provides program-building utilities and symbolic debugging aids for the developer, supplies a modular multitasking run-time executive, drivers for KXT11-CA on-board I/O devices, and a driver for communication with the RT-11 application.

Refer to SPD #12.70.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$400 - \$540

Contact: Consult your local DIGITAL sales office (see Introduction).

LA.SYS

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers • Operating systems
• Printing

LA.SYS is a device handler for interfacing a DIGITAL LA100 printer to the RT-11 operating system. Whereas the printer can send data back to the computer, the handler is designed to support bidirectional communications. That feature can be used only if the printer is connected to an interface containing both receive and transmit registers; bidirectional communications cannot be used with a printer interface containing only transmit registers.

LA.SYS has all the features to support the RT-11 operating system. LA.SYS uses the standard system protocols and also supports most of the standard printer options, which can be controlled through the SET command. LA.SYS has two features especially for the LA100. First, LA.SYS supports either 7- or 8-bit data bytes used in bidirectional communications. Second, LA.SYS supports the XON/XOFF protocol, which is used to control the data flow to the printer.

LA.SYS is written in PDP-11 assembly language under the RT-11 operating system and is distributed on an RX01-style diskette, which also contains LA.MAC, the source code for the handler, and LA.LST, a user's manual for configuring and installing LA.SYS.

Price: \$100

Contact: Jeffrey Katz
(617) 994-5370
WHALING CITY SOFTWARE
P.O. Box D-22
New Bedford, MA 02742

LAT-11

PDP-11 Operating System: None required

Keywords: • Asynchronous communication • Networking

LAT-11 enables a properly configured PDP-11 system to be used as a terminal server on the Ethernet local area network. The PDP-11 configuration, referred to as a LAT-11 server, communicates over the Ethernet with host systems (nodes) that support the LAT (Local Area Transport) host protocol. Users at terminals connected to the LAT-11 server establish virtual circuits (sessions) with nodes; therefore, terminal input/output to/from a node appears essentially identical to that of a terminal connected to the node through a direct EIA asynchronous line. However, unlike direct terminal connections, the LAT-11 server enables users to easily access all nodes on an Ethernet that run LAT.

Refer to SPD #15.32.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for VAX computers.

Price: \$3300

Contact: Consult your local DIGITAL sales office (see Introduction).

LG.SYS: Centronics 739 Serial Printer Handler

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers • Graphics • Printing

Memory required: 531(decimal) words.

LG.SYS is a serial-line printer handler that has been designed for the Centronics 739 graphics printer to be used on MINC RT-11 systems. The handler takes into account many of the 739's features that the DIGITAL LS.SYS handler does not. DECUS number 11-596.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

LOGOUT: RSX-11 Remote Terminal Logout

PDP-11 Operating System: RSX

Keywords: • Computer operations • Security

This RSX-11M task allows the user to log out a specific terminal by specifying its TT: unit number. LOGOUT is password protected to prevent unauthorized use. DECUS number 11-544.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

LSI-X.25 Front End Processor

PDP-11 Operating System: RSTS, RSX

Keywords: • Networking

The LSI-X.25 handles all three levels of the CCITT X.25 layered protocol. In addition, the entire LSI-X.25 system is transparent to applications software; thus, X.25 network terminals perform as local connections. The processor communicates with the host through a Direct Memory Access to increase CPU processing capacity. Because all X.25 communications to the host are multiplexed by the Front End Processor through the DMA interface, no additional hardware or processing is required on the host.

A version of this product is available for VAX computers.

Price: \$3995 – \$19,000

Contact: Roger D'Hollander

(519) 686-2900

CABLESHARE INC.

20 Enterprise Drive, P.O. Box 5880

London, Ontario N6A 4L6 Canada

LSTERM: Virtual Terminal Program

PDP-11 Operating System: RT-11

Keywords: • Asynchronous communication • File transfer

• Networking • Software utilities

Memory required: 6414(decimal) words.

This general-purpose utility allows any computer running RT-11 to connect to a host computer as if it were a remote terminal. No intelligence is assumed by the host computer. LSTERM allows a user to interact with a host computer through the RT-11 system and to transfer files between the host computer and the RT-11 system. When a file is transferred to a time-sharing host computer that is busy with several tasks and several users, the host may not be able to keep up with the steady stream of input from the RT-11 system by way of XON/XOFF protocol. DECUS number 11-543.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

MADRV (Memory-Assisted Disk MA)

PDP-11 Operating System: Micro/RSX, RSX

Keywords: • Asynchronous communication
• Device drivers/handlers • Disk utilities

This loadable device driver allows a GRANT 316 board to use memory as though it were a disk drive. Since the GRANT 316 is a DMA device, it allows the memory used in the disk emulation to run asynchronously from the target processor, thus improving throughput.

Price: \$99 - \$1495

Contact: Sandra K. Graham
(617) 894-3278

ADVANCED COMPUTER SYSTEMS, INC.

250 Prospect Street
Waltham, MA 02154

Micro/RSX 2780/3780 Emulator

PDP-11 Operating System: Micro/RSX

Keywords: • File transfer • Networking • Telecommunications

This layered software product for a suitably configured Micro/PDP-11 system provides communications to IBM systems, with capabilities similar to IBM 2780 and 3780 remote batch terminals. The product uses a single, point-to-point half- or full-duplex communications line and supports transmission speeds of between 2400 and 4800 bits a second. The communications discipline implemented by Micro/RSX 2780/3780 is a subset of IBM's Binary Synchronous Communications (BSC) protocol, which uses EBCDIC transmission code.

The Micro/RSX operating system Base Kit is prerequisite.

Refer to SPD #18.32.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1000

Contact: Contact your local DIGITAL sales office (see Introduction).

Micro/RSX 3271 Protocol Emulator

PDP-11 Operating System: Micro/RSX

Keywords: • Data conversion • Networking
• Telecommunications

This product enables Micro/RSX system VT100 terminal users and application programs to interact with application programs and system services in an IBM host system. The 3270 Terminal Emulator utility allows the VT100 user on a Micro/RSX system to access an IBM host system, a feature useful for users who are implementing distributed processing with Micro/PDP-11 systems. Users who are moving applications from centralized mainframes to Micro/PDP-11 distributed processors will find this capability an efficient migration tool during the transition phase; users who occasionally access applications that remain on mainframes can access those applications through their local Micro/RSX systems.

The application program interface provides a base for distributed applications in which one component of the application runs in an IBM system and the other component in a Micro/PDP-11. This type of application is useful for on-line access and update of a mainframe data base in response to an event in the Micro/PDP-11 or when it is inappropriate to present a 3270-style formatted screen to a user who is accustomed to Micro/RSX-style screens.

The Micro/RSX operating system Base Kit is prerequisite.

Refer to SPD #18.33.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200

Contact: Consult your local DIGITAL sales office (see Introduction).

MINC BASIC/FORTRAN: Support for the Nicolet Explorer

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers • Software utilities

Memory required: 30KW.

This package provides a set of BASIC and FORTRAN programs that permit the user to communicate with the Nicolet Explorer over the IEEE-488 by way of the IBV-11 on MINC systems. The software was written using BASIC Versions 1.2 and 2, RT-11 Version 3B, and FORTRAN Version 2.1 (fully patched). The package assumes that all software is fully patched as prescribed by DIGITAL. DECUS number 11-483.

Note: The FORTRAN version of the program requires the use of FORTRAN graphics for the VT105 (DECUS number 11-435).

Price: \$5 - \$225

Contact: DECUS (see Introduction)

MINC RT-11/FORTRAN Support for the Nicolet Explorer Via DLV11-J Serial Line

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers • Software utilities

Memory required: 32KW.

This package incorporates FORTRAN IV and MACRO-11 subroutines that permit the user to communicate with the Nicolet Explorer by way of a DLV11-J serial line. The software was written and tested on a MINC system and was verified to be functional under RT-11 Versions 4 and 5 on a MINC system, with either a VT105 or a VT125 terminal and with either an 11/2 or an 11/23 processor. The package requires the use of DECUS number 11-435 for MINC systems with the VT105 terminal or DECUS number 11-537 for MINC systems with the VT125 terminal. DECUS number 11-640.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

MINC/FORTRAN Support for MNCKW, VT100, DLV11-J

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers • Software utilities

The software in this package provides support for MNCKW real-time clocks, as a high-resolution timer; FORTRAN subroutines to control the VT100; and FORTRAN subroutines to provide monitor-independent serial I/O through the DLV11-J. DECUS number 11-412.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

MIOS-11/RSX Driver

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers

This driver enables users of the MIOS-11 I/O system to access the I/O hardware and its full complement of I/O modules. Under RSX, the programming interfaces are QIO directives in standard RSX format for MACRO-11 and a call QIO interface for FORTRAN IV or FORTRAN-77.

The MIOS-11/RSX Driver can be generated either loadable or resident. The size of the driver varies from 0.5 to 4.0K words, depending on the MIOS-11 configuration. The driver supports an MIOS-11 hardware system consisting of up to eight controllers, each with its own MIOS-11 bus. One controller can be referenced through its logical unit number.

The driver supports the full range of MIOS-11 modules and provides two options for processing unsolicited input from digital I/O modules. If "connected to interrupt," the occurrence of an interrupt sets an event flag and causes the data to be stored in a circular buffer provided by the connected task. If "linked to interrupt," the occurrence will start a task previously linked to interrupt.

Refer to SPD #10.07.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

MODLNK

PDP-11 Operating System: RSX

Keywords: • Networking • Software utilities
• Telecommunications

This FORTRAN subroutine allows any PDP-11 or LSI-11 under RSX to communicate with a Modicon 584 PLC. Communications are handled by way of any DIGITAL terminal device, which is then connected by way of a Modicon J478 modem to a Modicon multidropped network. The network can handle up to 256 Modicon 584s. MODLNK READs multiple registers and multiple coils, WRITEs multiple registers, and SETs multiple coils.

Price: \$1000

Contact: David L. Schroeder, Ph.D., President
(412) 776-3130
PROCESS CORP.
163 Thorn Hill Road
Warrendale, PA 15086

Multuser DTR

PDP-11 Operating System: RSX

Keywords: • Data base management • Data entry
• Telecommunications

This set of programs connects standard DTR with up to 16 terminals. Multuser DTR greatly speeds up data base management. In addition to most of the standard DTR functions, some new functions, such as menus, are available to help users work with DTR procedures. Additionally, Multuser DTR has a set of functions that provide formatted data entry to enable screen designing, data entry, and saving and unsaving designed screens.

Multuser DTR users use Standard DTR on a time-sharing basis. Each user is identified by a dictionary (however, some of the users may have the same dictionary). A special program allows the user to start DTR for selected terminals. When using this support, the system manager can allow all or some users to connect to the data base without connecting to any other system resources.

Price: \$500 - \$1200

Contact: Dariusz Niedzieski
10-13-45 or 10-24-27
COMTECH COOP., LTD.
ul. Chlopickiego 44
04-314 Warszawa Poland

MUX200/RSX-IAS Multiterminal Emulator

PDP-11 Operating System: IAS, RSX

Keywords: • Networking

This PDP-11-based software package provides communication with a CDC 6000, CYBER series, or other host computer systems capable of using 200 UT Mode 4A communications protocol. The software operates under an RSX-11M, RSX-11M-PLUS, or IAS operating system through supported terminals. The user can communicate at command level with a host system. Using RSX-11M-PLUS-supported devices, jobs for batch processing can be sent to and results received from the host.

MUX200/RSX-11M communicates with the host by using the Mode 4A communications protocol, as defined in CDC publication 82128000. The software package can be configured to support either ASCII or external BCD versions of the communications protocol.

MUX200/RSX-11M provides for one synchronous communication circuit to a host computer system. The product supports a single switched

or dedicated leased line and a 2- or 4-wire common carrier facility at transmission rates up to 4800 bps.

The package enables users to communicate simultaneously with a host system over a single line. The PDP-11 system, while using a single physical drop, appears to the host as a number of multidrops and terminals on the circuit. The maximum number of simultaneous users supported by the MUX200/RSX-1AS system is 16; however, that can be limited to a lower figure by host hardware or software constraints.

Refer to SPD #10.77.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the VAX computer.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

NETEX (Network Executive)

PDP-11 Operating System: RSX

Keywords: • Data conversion • File transfer • Networking
• Telecommunications

Memory required: 265KB.

The NETEX software provides the access method for moving data among all types of CPUs. This package resides as a subsystem (ACP) and communicates with NETEXs on other systems. Using a protocol designed to follow the ISO model, NETEX can move data in conjunction with NSC HYPERchannel hardware. The HYPERchannel is driven by a software package developed by NSC and interfaces to NETEX. NETEX is responsible for the session through network layers of the ISO model. Applications, written by users in almost any high-level language, can easily call on NETEX to move a block of data to a specified host. NETEX is written in Pascal and assembly language.

A version of this product is available for VAX computers.

Price: \$19,008

Contact: Gerry Hoppe

(612) 425-2202 ext. 2544

NETWORK SYSTEMS CORP.

7600 Boone Avenue North

Brooklyn Park, MN 55428

NEXUS Communications Software

PDP-11 Operating System: RSTS

Keywords: • Telecommunications

This set of programs provides the software link between portable teletransaction computers (PTCs) and DIGITAL PDP and VAX computers. The hardware link can be either by a direct connection or through the switched telephone network. Communication can be established under the control of a user on the host computer or can be completely automatic, with appropriate messages generated for later monitoring by

the user. An unlimited number of processes can be created on the host for simultaneous transmissions from/to PTCs.

A version of this product is available for VAX computers.

Price: \$3000 – \$5000

Contact: Earl Lewis

(403) 236-6100

CANALTA

7100 44th Street, S.E.

Calgary, Alberta T2H 1X2 Canada

OS/NET (Local Area Networking)

PDP-11 Operating System: RSX, RT-11

Keywords: • Device drivers/handlers • Networking

This module provides the necessary networking interface and device driver software to implement Local Area Networking on several types of DIGITAL computers using DESNET, Destek's high-performance, low-cost Local Area Network. OS/NET uses OS/RT, Destek's real-time, multitasking operating system kernel, to allow an OS/RT application "task" to communicate over the DESNET network. The network uses the IPC (Inter Process Communications) functions of OS/RT as if it were operating on a single machine. OS/NET transparently routes IPC messages to any computer on the network. OS/NET can be applied to any business or industrial application that is distributed.

A version of this product is available for VAX computers.

Price: \$400 – \$2000

Contact: Dennis Rieger

(408) 737-7211

THE DESTEK GROUP

830 East Evelyn Avenue

Sunnyvale, CA 94086

PB: Device Handler for Data I/O System 19 Prom Programmer

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers • File transfer

Memory required: 582 words.

This handler, derived from DIGITAL's PC11 high-speed paper tape reader, allows for device-independent execution of file and command transfer by way of PIP.SAV to and from the Data I/O System 19 Universal Programmer 990-1900 by way of a DLV11-J line at address 176520 and vector 320. The handler needs a running line time clock under a system-generated monitor with a device-timeout feature for reading from the programmer device. DECUS number 11-665.

Note: The system is generated with a device-timeout feature. German and English users' instructions are included as PB.GER and PB.ENG.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

PC-102

PDP-11 Operating System: RSTS, RSX, RT-11, ULTRIX-11

Keywords: • Telecommunications

PC102 turns a PC into a full-featured VT100/52 terminal. VT screen emulation includes underlining, reverse video, blinking, and boldface attributes. Full keyboard and keypad emulation, including special modes, are included; 132-column support is optional.

PC102 includes VT102 local printer support and bidirectional file transfer. Ten user-definable 64-character softkeys are included. Ten program script keys allow setup and execution of 1-keystroke control functions, such as autoconnection with TELENET. Local printing is controlled by keyboard and application programs. XON/XOFF and Pause/Kick file transfer protocols are included for operation with full- and half-duplex systems, respectively. SHELL KEY allows users to execute DOS commands.

PC102 supports baud rates from 300 to 38.4K by way of direct or modem connection and is compatible with such VT applications as EDT, KED, WORD-11, ALL-IN-1, DECALC, TECO, UNIX,* and vi.

* UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for VAX computers.

Price: \$89 - \$139

Contact: Robert Larsen

(612) 944-0593

GENERAL MICRO SYSTEMS

P.O. Box 5330

Minneapolis, MN 55343

PC4010

PDP-11 Operating System: RSTS, RSX, RT-11, ULTRIX-11

Keywords: • Graphics • Telecommunications

This software package turns a PC into a Tektronix 4010 graphics terminal, allowing users to run graphics applications based on another computer system. Displayed graphics images can be printed, using an Epson Graphtrak or other dot matrix printer. Configurable for IBM, Hercules, and other graphics boards, 720 × 348 or higher resolution is recommended. PC4010 includes VT52 and VT102 emulation.

A version of this product is available for VAX computers.

Price: \$189 +

Contact: Robert Larsen

(612) 944-0593

GENERAL MICRO SYSTEMS

P.O. Box 5330

Minneapolis, MN 55343

PCL-11M**PDP-11 Operating System:** RSX**Keywords:** • Device drivers/handlers • Networking

The PCL-11M I/O driver software is designed to give the RSX-11M Version 3.2 and RSX-11S Version 2.2 user access to PCL11-B parallel communications link hardware functionality. The PCL-11M software driver provides a message-oriented data communications capability with user software located in up to 16 processors linked into a common local network through the PCL11-B time division, multiplexed (TDM) parallel bus. A user-originated message of variable length can be directed to any other single receiving node during each transmission transaction. The TDM bus permits up to 16 concurrent transmissions when 16 PCL11-B nodes are connected to the bus. PDP-11 and VAX-11 CPU nodes can be mixed on the same TDM bus.

The PCL11-B is supported on RSX-11M and RSX-11S by two independent but complementary drivers. One driver (LRDRV) supports the PCL11-B's receiver subsection, and the other driver (LTDRV) supports the transmitter and master subsections. The driver software is provided as source code only.

The PCL-11M features QIO interface accessible through MACRO and higher-level languages, message receipt accept/reject facilities under user software control, special event flag facilities available to notify the user of unsolicited events that require attention, compatibility with similar drivers supported by VAX/VMS Version 2.1 and on VAX-11 processors linked by the PCL11-B, software assignable bus mastership or secondary mastership for the local PCL 11-B transmitter, and a special 16-bit channel-opening protocol facility available for user programs.

Refer to SPD #14.43.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$640 - \$1600**Contact:** Consult your local DIGITAL sales office (see Introduction).**PLC (Programmable Logic Controller) Device****PDP-11 Operating System:** RSX**Keywords:** • Device drivers/handlers

Memory required: 1K bytes.

The PLC device driver controls and receives monitoring data from the Allen-Bradley Programmable Logic Controller (PLC). Any PLC using a similar data-transfer technique is accessible by this driver. The driver controls up to eight PLCs operating in parallel. That limit can easily be extended. DECUS number 11-484.

Price: \$5 - \$225**Contact:** DECUS (see Introduction)

PL.MAC: A Write-Only Device Handler for the IEEE-488 Interface 11-482

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers • Mapping
• Source code control

Memory required: 16KW.

This RT-11 device handler provides a means of writing to a "listen only" device on the IEEE-488 bus (IBV-11 or IB-11 interface). Written for use with the HP-9872 plotter, PL.MAC can be used with a modified version of the plotting programs available as the MINC/BASIC and FORTRAN support for the HP-9872A by way of the IEEE-488 bus, DECUS number 11-427. This handler can be assembled for an XM monitor. Plot files can be created on disk without waiting for the plotting, and normal RT-11 file-transfer programs (for example, QUEUE or PIP) can be used to plot the data.

A SET command is provided to enable the IEEE bus listener address to be changed. UNIBUS addresses and vectors can be changed by editing the source file. DECUS number 11-482.

Restrictions: The user is restricted to only one active device on the IEEE bus, that device operating in "listen only" mode.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

poly-COM™

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Asynchronous communication • File transfer
• Networking • Personal computing

Previously known as poly-XFR™ CP/M® Communications, the poly-COM package for the Rainbow 100 features binary/ASCII file transfers between DIGITAL's Rainbow 100 CP/M® -86/80 local system or MS™ -DOS local system and a host system. The name poly-COM has been changed to reflect the new CP/M-86/80 Version 2.0 operating system upgrade and the MS-DOS operating system addition to this product. The functionality of this product is the same. The host systems must run the poly-XFR CP/M communications package in order to communicate with poly-COM running on the Rainbow 100.

The package has time-out and error-detection features that ensure the integrity of the transferred data. The software runs up to 9600 bps in a local environment and uses full-duplex modems for remote data transfer.

The package enables the user to transfer, store, and retrieve files; use host peripherals; and act as terminal to the host. The user can access either system to do program development, transfer data between systems, or toggle the local printer on or off.

The two main components of poly-COM are software that runs on the host and software that runs on the local system. The poly-COM package is ideal for environments that use distributed development and/or personal computing systems and that need to share data, programs, or peripherals among those systems.

DIGITAL distributes this software product under license from Polygon Associates, Inc.

Refer to SPD #A3.23.xx when requesting further information on this product from your local DIGITAL sales office.

poly-COM™ and poly-XFR™ are trademarks of Polygon Associates, Inc. MS-DOS™ is a trademark of Microsoft Corp. CP/M® is a registered trademark of Digital Research, Inc.

A version of this product is available for VAX computers.

Price: \$200

Contact: Consult your local DIGITAL sales office (see Introduction).

PRO-2780/3780 Communications Applications

PRO Operating System: P/OS

Keywords: • Computer operations • Menu handlers
• Telecommunications

This application for the Professional 300 series of personal computers provides communications to systems with capabilities similar to those of IBM 2780 and 3780 remote batch terminals. The software uses a single point-to-point communications line, which can be half- or full-duplex. Transmission speeds of up to 9600 bits a second can be achieved on an otherwise idle system.

The user interacts with the product by means of a hierarchy of menus and forms. Help information provides a brief description of the product and its menus.

The communications discipline implemented by PRO-2780/3780 is a subset of IBM's Binary Synchronous Communications (BSC) protocol, which uses EBCDIC transmission code. Horizontal-format control records can be received and processed. A subset of vertical-format control escape sequences is supported: single, double, and triple space; form feed; and space suppress. Any block-addressable storage device supported by P/OS can be used as a source of transmission files. Both fixed-length (80-character card image) and variable-length files can be transmitted as EBCDIC (automatically translated from ACSII) or binary data (no translation). BSC control characters are automatically added to the data before transmission and stripped on reception. Any block-addressable storage device supported by P/OS can be used to receive files. Optionally, received print files can be sent to a printer, if one is attached to the Professional system.

P/OS hard disk operating system is prerequisite.

Refer to SPD #40.14.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$595

Contact: Consult your local DIGITAL sales office (see Introduction).

PRO/Associate

PRO Operating System: P/OS

Keywords: • Disk utilities • Networking

PRO/Associate allows two users to share the software resources of a Professional 350 or 380 simultaneously, using a VT200-series terminal. The product is installed as an application, using disk services from the P/OS Hard Disk main menu. A VT200-series terminal is attached to the Professional's printer port, using the normal BCC05 printer cable. When the PRO/Associate application is chosen, the PRO/Associate menu appears on the VT200 terminal, and the main menu on the Professional is ready to receive the next command.

The services available on the VT200-series terminal include word processing, communications, data management, spreadsheet operations, and utility programs to manage disk, file, print, and log-in/log-out services. Although menu entries for word processing, spreadsheet, and data management appear on the Associate terminal, the applications must first be loaded onto the Professional by choosing "disk services" from the PRO/Associate menu and performing the "install application" function.

Several communications options are available. The Professional can be hard wired to a host or connected by a modem or TMS or through the Ethernet local area network. The user can send/receive data and documents and log into a host as if locally attached, using either the Professional or the Associate terminal. With Ethernet, both terminals can perform these functions simultaneously.

Use of certain resources, such as the printer or the asynchronous communications line, must be coordinated by both users, since those devices cannot be shared. They can be used sequentially but not simultaneously. Although the TMS has two separate lines to the phone company, only one user can access the TMS unit at any given time. VT200-series users cannot have one line and the Professional user the other line.

Log-in/log-out is provided as an option to prevent unauthorized access to the system. Other utilities are provided to delete, copy, and rename files. Many functions and options of the Associate can be performed while another user operates the main Professional terminal when system configuration is correct.

Refer to SPD #40.52.xx when requesting further information about this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

PRO/Communications for Diskette or Hard Disk**PRO Operating System:** P/OS**Keywords:** • Asynchronous communication • File transfer

This software provides communications setup, terminal emulation, call services, and file transfer for any Professional 300 system configured with the P/OS diskette or hard disk operating system. The communications line protocol supported is asynchronous. The communications setup allows the user to specify a variety of parameters that can be used when communicating with a remote PDP-11 or VAX-11 host. The parameters that can be specified include transmit and receive speeds, the number of data bits, the number of stop bits, and parity detection. For file transfer operation, default volume, directory names, and a maximum transmission file size can be specified.

Terminal emulation mode allows the Professional 300 to be linked to another system, allowing the Professional to emulate a standard ASCII video terminal. In this mode, the Professional can either function in Professional native mode (communications setup mode) or emulate a VT52 or VT102 alphanumeric terminal. A VT125 graphics terminal can also be emulated if the Professional is configured with an Extended Bit Map hardware option. When in terminal emulation mode, the Professional can be connected to any system that supports VT52, VT102, or VT125 video terminals.

The host file transfer capability allows files to be transferred from a Professional 300 system to either a PDP-11 or a VAX-11 host system running Professional Host Communications software. Any RMS file can be transferred, including program files, data files, and text files. In this mode, programs developed using the Professional Host Tool Kit on a host PDP-11 or VAX-11 system can be transferred to a Professional 300 system. After the transfer is complete, the transferred files can be debugged or executed on a local Professional system.

P/OS diskette and P/OS hard disk are prerequisite.

Refer to SPDs #40.17.xx and #40.06.xx when requesting further information on these products from your local DIGITAL sales office.

Price: \$195

Contact: Consult your local DIGITAL sales office (see Introduction).

PRO/DECnet**PRO Operating System:** P/OS**Keywords:** • File transfer • Networking • Security
• Telecommunications

PRO/DECnet allows the Professional 300 series of personal computers to be connected to a DECnet network by using Ethernet. In this networking environment, the Professional becomes a DECnet Phase IV end (nonrouting) node. The software supports only Ethernet as the physical link to other systems. All the functions supported by the network are available to the Professional running PRO/DECnet. For

instance, if a DECnet router is part of the local network where the Professional is connected, it will have access to all the remote nodes participating in the wide area network.

The software offers the functions of a Phase IV end node: file transfer, network management, network virtual terminal, and remote file access. In addition, PRO/DECnet includes mail and phone. The PRO/Tool Kit and Professional Host Tool Kit, with DECnet support, also offer task-to-task communication tools for application developers.

The major difference between other DECnet implementations and PRO/DECnet is that the latter is entirely customer installable and menu driven. Therefore, the user needs no prior knowledge of DIGITAL communication products. The network facilities are embedded within the Professional Operating System (P/OS) and are completely transparent to the end user. The PRO/DECnet menu interface satisfies the P/OS requirements.

PRO/DECnet does not consume any user memory, except for a very small amount for the communication executive (CEX). The PRO/DECnet kernel code is loaded into the dual ported memory made available by the Professional Ethernet controller board, the DECNA. Extra DECNA memory may remain available for background network utilities.

Two restrictions apply for PRO/DECnet. First, no routing is supported. Also, because the Professional 350 is a single-terminal system, no other terminal on the network is allowed to be a virtual terminal on the Professional. However, full support is given to allow the Professional 350 to act as a remote terminal to RSX-11M, Version 4.1; RSX-11M-PLUS, Version 2.1; and VAX/VMS, Version 3.5 systems.

P/OS hard disk is prerequisite.

Refer to SPD #40.09.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

Professional Host Communications

PDP-11 Operating System: RSX

Keywords: • File transfer • Networking • Telecommunications

This software for transferring files between a Professional 300 and an RSX-11M/11M-PLUS, or VAX/VMS host system is initiated by a Professional running PRO/Communications in terminal-emulation mode. After the Professional Host Communications facility is started, the Professional switches from terminal-emulation to file-transfer mode. The files can then be transferred between the Professional and the host system.

Refer to SPD #30.29.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for VAX computers.

Price: \$135

Contact: Consult your local DIGITAL sales office (see Introduction).

PROM/RT-11

PDP-11 Operating System: MicroPower/Pascal, RT-11

Keywords: • Device drivers/handlers • File transfer
• Programming tools • Software utilities

This RT-11 software utility is designed to control and operate the Data I/O System-171 universal PROM programming hardware device. PROM/RT-11 supports only Data I/O 171 PROM programmers with firmware that has been modified in accordance with DIGITAL's specifications. PROM/RT-11 and the modified Data I/O 171 PROM programmers are available only from DIGITAL as components of the PB11 PROM programming system. The programmer hardware connects to a host development system over an RS232C serial line. That connection must be distinct from the console interface on the host system.

To create a PROM or EPROM-based application, the user writes application programs in FORTRAN, MACRO-11, or MicroPower/Pascal, using program sections to properly segment read-only and read-write segments of the application. When coding and testing of the application in the host development environment are complete, a final build is performed to produce:

- An RT-11 .SAV or .LDA file or a MicroPower/Pascal .MIM file containing the ROMmable binary image to be blasted into PROM or EPROM chips
- An RT-11 LINK map of the .SAV or .LDA file contents or a MIB map of the .MIM file contents, indicating the low and high memory limits for the ROM area of the application program

At this point, the PROM/RT-11 software is invoked to blast the user's program into the desired PROM chips.

Refer to SPD #12.21.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

PRO/NAPLPS

PRO Operating System: P/OS

Keywords: • Graphics • Telecommunications

This software provides NAPLPS (North American Presentation Level Protocol Syntax) terminal emulation capability for the Professional 300. NAPLPS is the ANSI/CSA standard protocol for the presentation of graphics and text information.

This product allows the user to communicate with remote host systems that implement the NAPLPS protocol. This can be done through a modem or a direct connection to the host.

Using PRO/Communications, the user can define set-up parameters for the communications line and make entries in the Phone Book. The Call Services facility allows the Professional user to "automatically" dial a remote host system (when used in conjunction with an autodial modem) using telephone numbers stored in the Professional Communications Phone Book. Manual dialing is also supported.

If PRO/Communications is installed on the system, DIGITAL's Telephone Management System (TMS) or Mini-Exchange can also be used. P/OS hard disk and PRO/Communications for hard disk are prerequisite.

Refer to SPD #40.43.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$195

Contact: Consult your local DIGITAL sales office (see Introduction).

PRO/SNA Communications

PRO Operating System: P/OS

Keywords: • Data conversion • File transfer • Networking
• Telecommunications

This facility allows Professional users to share information between a Professional 350 or 380 hard disk system and IBM host computing systems in a Systems Network Architecture (SNA) environment. When running PRO/SNA Communications, a Professional can access IBM system resources as a 3270 Information Display System (IDS) terminal; receive and print output from an IBM host system, emulating an IBM 3287 printer; and transfer data between Professional file subsystems and IBM batch subsystems as an RJE workstation.

The SNA Communications facility emulates the communication protocol management functions of the IBM 8100 Information System (a general-purpose terminal cluster controller). Functions are limited to secondary-station modes as supported by the IBM 8100.

The product uses IBM's SDLC line discipline and the SNA interchange protocols. That allows the Professional to communicate with one or more IBM host systems running in a configuration defined by the Advanced Communication Function/Systems Network Architecture (ACF/SNA).

The SNA Communications facility consists of two separately licensed products: PRO/SNA Terminal Emulation and PRO/SNA Remote Job Entry. Both products contain a menu-driven user interface and extensive on-line help and are installed using the standard P/OS installation procedures. This on-line help is supplemented with an on-line training package.

Refer to SPD #40.15.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

Q-NET — Interface to DECnet**PDP-11 Operating System:** RSX**Keywords:** • Asynchronous communication • File transfer
• Networking

Q-NET uses the GOULD/DEC Parallel Data Link to connect any Concept 32-series computer running MPX 2.x or 3.x and any PDP-11, LSI-11, or VAX computer running RSX or VMS and DECnet. The DIGITAL computer serves as a gateway that makes the Gould computer fully accessible to DECnet and provides full access to DECnet capabilities. Terminals on any DIGITAL or Gould computers can log on to any other DIGITAL or Gould computer in the network.

The GOULD/DEC Parallel Data Link includes peripheral sharing, whereby the DIGITAL computer has access to Gould peripherals and the Gould computer has access to DIGITAL peripherals. Access of peripherals on the other machine is transparent; they appear to the user as if connected to the local computer.

The GOULD/DEC Parallel Data Link also allows Gould files to be accessed by local or remote users in the same way as DIGITAL files, and the contents are automatically translated. Thus, DECnet can transfer files between any two disks in the network.

Another feature enables any Gould or DIGITAL computers in the network to exchange data by using DECnet calls. Tasks in the Gould and DIGITAL computer connected by the parallel link can pass data directly with simple high-speed read/write calls.

The DIGITAL gateway computer can be a separate DIGITAL mainframe or can be a rack-mounted unit in the Gould cabinet.

The link hardware consists of a Gould HSD Interface, a control logic card, and a DIGITAL Q-bus- or UNIBUS-compatible DMA Interface. Cable lengths up to 250 feet are supported with the standard drivers. Optional drivers allow cable lengths up to 1000 feet. Raw transfer rates are up to 700KB for Q-bus and 1000KB for UNIBUS.

A version of this product is available for VAX computers.

Price: \$20,450 – \$39,750**Contact:** Wayne R. Fox
(615) 482-6649

SCIENCE APPLICATIONS INTERNATIONAL CORP.
152 Fairbanks Road
Oak Ridge, TN 37830

RDDRV: Virtual RAM Disk Driver**PDP-11 Operating System:** RSX**Keywords:** • Device drivers/handlers • Disk utilities

This package provides support for the virtual RAM disk driver, RDDRV, under RSX-11M. An unused system-controlled partition can be dedicated as a virtual memory disk device. The RAM disk can be

initialized and mounted like any other Files-11 disk. To speed up I/O operations, a dedicated F11ACP is recommended. The measured performance is better than twice that of an RL02 disk drive in a PDP-11/23+ environment. The theoretical transfer rate of the PDP-11/23+ can be calculated as 512-byte/1.5 msec, provided that a disk block move operation is accomplished without any context switch. The driver can be used as a fast RX01/RX02 floppy device to speed up disk-resident overlaid tasks. Another application might be a fast work disk for data sampling applications. The contents of the RAM disk might be saved or restored by using the standard utilities for Files-11 disk devices. DECUS number 11-667.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RJE (Remote Job Entry)

PDP-11 Operating System: RSX, RT-11

Keywords: • Telecommunications

RJE links a DIGITAL computer to the IBM world or to other host computers using the IBM 2780 protocol. RJE features high performance, automatic receive, spool print files, concatenate send files, autoanswer, indirect command files, and binary support.

Price: \$1850 - \$2250

Contact: W. T. DeRouchey

(714) 259-1012

UNIQUE AUTOMATION PRODUCTS

15401 Redhill, Suite G

Tustin, CA 92680

RSTS/E-2780

PDP-11 Operating System: RSTS

Keywords: • Data conversion • Networking

While running as a user job on a suitably configured RSTS/E system, the RSTS/E-2780 software emulates the communications protocol of an IBM 2780 device. RSTS/E-2780 transmits files stored on any medium supported by RSTS/E and stores files on any output medium supported by RSTS/E except DECtape. Magnetic tape operation can cause timeout errors, unless the tape is positioned at the start of the file when transmission or reception is about to begin. Files can be printed directly on any line printer supported by the host operating system.

RSTS/E supports a spooling feature that allows users running with the RSTS/E-2780 software to queue one or more files for subsequent transmission. The processing requirements of the 2780 protocol can perceptibly degrade RSTS/E response time during transmission or reception.

Refer to SPD #10.50.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for the VAX computer.

Price: \$80 – \$9760

Contact: Consult your local DIGITAL sales office (see Introduction).

RSTS/E High-Performance 2780/3780 Emulator

PDP-11 Operating System: RSTS

Keywords: • Data conversion • File transfer • Networking

This emulator runs as a user job on a suitably configured RSTS/E operating system while emulating the communications protocol of an IBM 2780/3780 device. The emulator uses a KMC-11 microprocessor to handle modem and line control, as well as BSC protocol. By using a microprocessor to perform those functions, the CPU load required to do protocol emulation is reduced.

The emulator appears as an IBM 2780 or 3780 data transmission terminal, in EBCDIC mode, on a point-to-point switched or nonswitched synchronous data link operating with standard 2780/3780 protocol. Received data blocks can be up to the maximum buffer size: 400 characters for 2780 and 512 characters for 3780.

The emulator can transmit and receive data or job control files with an IBM System/370 (including 303x processor systems) running Power/VS, HASP, ASP, JES1, JES2, or JES3. The emulator operates at transmission speeds up to 9600 bits a second. Switched, leased, or private circuits using Bell System 201, 208, 209, or 212 modems or equivalents are supported.

Refer to SPD #10.49.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$4400

Contact: Consult your local DIGITAL sales office (see Introduction).

RSX-11 2780/3780 Emulator

PDP-11 Operating System: RSX

Keywords: • Data conversion • File transfer • Networking

This software emulates the communications protocol of an IBM 2780 or 3780 device while running as a user task on a suitably configured RSX-11M or RSX-11M-PLUS disk-based system. (This product is not designed to run on RSX-11S systems.)

The RSX-11 2780/3780 Emulator appears as an IBM 2780 or 3780 data transmission terminal on a point-to-point switched or nonswitched synchronous data link operating with standard 2780/3780 protocol. This product can transmit and receive data or job control files with an IBM System/370 (including 303x processor systems) running Power, HASP, RES, JES2, or JES3. The product will transmit files from or store received files on any file-structured device accessible through the RSX-11M or RSX-11M-PLUS File Control Services (FCS) except DECTape or TU58.

Refer to SPD #10.01.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$3800 – \$9500

Contact: Consult your local DIGITAL sales office (see Introduction).

RSX-11 PSI/M (Packetnet System Interface)

PDP-11 Operating System: RSX

Keywords: • Networking

This system allows a suitably configured RSX-11M system to connect to Public Packet Switching Networks (PPSNs) conforming to the CCITT recommendation X.25 (June 1980). Using RSX-11 PSI/M, the system can function as a packet-mode Data Terminal Equipment (DTE) on the PSDN. The product supports access to the facilities offered by X.25 communication for RSX-11M user programs written in MACRO-11, FORTRAN IV, and FORTRAN-IV-PLUS. RSX-11 PSI/M supports task-to-task and remote terminal communications through the X.25 network and can coexist with or operate as a layered product under DECnet-11M to allow use of DECnet facilities over X.25 PSDNs, as well as private leased lines or switched telephone networks.

The system features task-to-task and remote terminal communications, virtual circuits, line discipline, user program interface, interactive terminal interface, network management, and communications.

Refer to SPD #10.42.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$4000

Contact: Consult your local DIGITAL sales office (see Introduction).

RSX-11 PSI/M-PLUS (Packetnet System Interface)

PDP-11 Operating System: RSX

Keywords: • Networking

This system allows a suitably configured RSX-11M-PLUS system to connect to Public Packet Switching Data Networks (PSDNs) conforming to the CCITT recommendation X.25 (June 1980). Access to RSX-11 PSI/M-PLUS is supported for RSX-11M-PLUS user programs written in MACRO-11, FORTRAN IV, and PDP-11 FORTRAN-77/RSX. RSX-11 PSI/M-PLUS can coexist with or operate as a layered product under DECnet-11M-PLUS to allow use of DECnet facilities over X.25, as well as private leased lines or switched telephone networks.

The system features task-to-task and remote terminal communications, virtual circuits, line discipline, user program interface, interactive terminal interface, network management, and communications.

Refer to SPD #10.43.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$4000

Contact: Consult your local DIGITAL sales office (see Introduction).

RSX-11 TSU05 Device Driver**PDP-11 Operating System:** RSX**Keywords:** • Device drivers/handlers

This device driver supports the TSU05 magnetic tape interface and drive under RSX-11M and RSX-11M-PLUS. Error-logging support for the TSU05 is also available for systems that support error logging.

The TSU05 subsystem consists of a TSU05 controller board and a TS05 tape drive. The TS05 drive operates in either of two modes: 25 ips or 100 ips streaming.

The TSU05 subsystem is compatible with the TS11/TU80 devices for most operations. The TSU05 software allows device registers to be logged when detecting device/tape errors. An error-reporting program is supplied as part of the software package. That special module reports TSU05 errors and is used as part of the normal RSX-11 error-logging and reporting process, by the program RPT.

The TSU05 subsystem supports RSX-11 utility programs, such as PIP and FLX, as well as RMSBCK and RMSRST. The UETP (User Environment Test Program) is also supported (as a TS-11 emulation only). RSX-11 utility programs use the TSU05 in 25 ips mode only.

An Installation Verification Program (IVP), showing how to program the TSU05 for 100 ips operating mode, is supplied.

Refer to SPD #12.77.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Contact your local DIGITAL sales office (see Introduction).

RSX-11/3271 Protocol Emulator**PDP-11 Operating System:** RSX**Keywords:** • Data conversion • File transfer • Networking

This protocol emulator (PE) enables RSX-11M and RSX-11M-PLUS VT100 terminals and application programs to interact with IBM system application programs and system services. The Terminal Emulator utility allows the VT100 user on an RSX-11 system to access an IBM system. That feature is useful for users who are implementing distributed processing with PDP-11 systems. Users who are moving applications from centralized mainframes to PDP-11 distributed processors will find that capability an efficient migration tool during the transition phase; users who occasionally access applications that remain on mainframes can access those applications through their local RSX-11 systems.

Refer to SPD #10.88.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$4200 - \$4620

Contact: Consult your local DIGITAL sales office (see Introduction).

RSX-11M/IAS RJE/HASP**PDP-11 Operating System:** IAS, RSX**Keywords:** • Data conversion • Modeling/simulation
• Networking

This package, operating as a set of tasks under an RSX-11M or IAS operating system, performs the standard functions of an IBM HASP Remote Job Entry Workstation. RSX-11M/IAS RJE/HASP provides multileaved (pseudosimultaneous, bidirectional) communication of up to seven input and seven output data streams. The number of input and output streams accommodated is fixed at assembly time. The operator can assign operating system-supported devices to data streams by file or on a temporarily dedicated basis.

RSX-11M/IAS RJE/HASP provides the standard HASP protocol features of data compression of repeated sequential characters, including blanks; full EBCDIC transparency; multileaving; and printer vertical forms control skip to channel 1 (top of form) only.

Operator control is provided through the MCR command dispatch feature. The RSX-11/IAS terminal that starts RSX-11M/IAS RJE/HASP provides its control function. This terminal can be the RSX-11/IAS operator's console or any other RSX-11/IAS terminal (logical or physical).

One of the tasks directly controls the communications line. To responsively perform bisynchronous I/O functions, the task is privileged, noncheckpointable, and nonshuffleable. Concurrent use of the communications line by other RSX-11/IAS tasks is precluded.

Any mass-storage or unit record device supported by the operating system can be used as a source or destination of data for a HASP data stream. RSX-11M/IAS RJE/HASP controls file-structured devices through the use of the standard file control system. Non-file-structured devices, such as card readers, line printers, or terminals, are attached during use, and input/output requests are issued.

Refer to SPD #10.51.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$7900 - \$9900**Contact:** Consult your local DIGITAL sales office (see Introduction).**RSX-11M/M-PLUS RJE/HASP****PDP-11 Operating System:** RSX**Keywords:** • Modeling/simulation

This package performs the standard functions of an IBM HASP Remote Job Entry Workstation. The package operates as a set of tasks under the RSX-11M and RSX-11M-PLUS operating systems and provides multileaved (pseudosimultaneous, bidirectional) communication of up to seven input and seven output data streams. The number of input and output streams accommodated by RSX-11M/M-PLUS

RJE/HASP is fixed at assembly time. The operator can assign operating system-supported devices to data streams for each file or on a temporarily dedicated basis.

RSX-11M/M-PLUS RJE/HASP provides standard HASP protocol features of data compression of repeated sequential characters, including blanks; full EBCDIC transparency; multileaving; and support for printer vertical forms control skip to channel 1 (top of form) only.

Refer to SPD #10.48.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$3450 - \$9900

Contact: Consult your local DIGITAL sales office (see Introduction).

RSX-11M/SNA Protocol Emulator

PDP-11 Operating System: RSX

Keywords: • Data conversion • File transfer • Networking

This protocol emulator (PE) allows a suitably configured RSX-11M operating system to communicate with an IBM Systems Network Architecture (SNA) network. The PE emulates communications functions of an IBM 3790 programmable cluster controller and must be defined as such in the IBM SNA network. RSX-11M/SNA PE does not provide any of the SNA programmable cluster controller functions other than communication in the IBM SNA network.

RSX-11M/SNA PE extends to an RSX-11M application program the ability to communicate by way of the SNA network with an IBM application on a task-to-task basis. The RSX-11M application must be written in MACRO-11 or use MACRO-11 calls to interface with the SNA PE. The RSX-11M application can use all the facilities of RSX-11M and many RSX-11M layered products to implement an application.

The PE provides three levels of support for the RSX-11M application: Emulator Control (EC) mode, Extended Emulator Control (XEC) mode, and Application Control (AC) mode. Those interfaces provide different levels of support and user involvement in the SNA protocols. In all those modes, the application's responsibility is to generate and interpret any data transmitted between the cooperating tasks.

This product cannot run concurrently with DECnet-11M or with RSX-11M/3271 Protocol Emulator.

Refer to SPD #14.04.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$5000

Contact: Consult your local DIGITAL sales office (see Introduction).

RSX DLX-11

PDP-11 Operating System: RSX

Keywords: • Networking

The system provides an error-free communications path between MACRO-11 tasks on an RSX-11M or RSX-11S operating system and

a Phase III DECnet-11M or DECnet-11M-PLUS host node. User-written MACRO-11 tasks are required on both ends of the link. The DLX process must be assigned to the line on the Phase III RSX-DECnet host. RSX DLX-11 can be configured in a point-to-point topology or as a tributary on a multipoint line. A special loopback mirror task is supplied to verify connectivity to the DECnet-11M or DECnet-11M-PLUS host, using the host's network management capabilities.

RSX DLX-11 provides the following user task functions: open a line (assign the line to a task), initialize a line (start the DDCMP protocol), receive a message on the line, transmit a message on the line, hang up on the line, and close a line (deassign the line from a task).

Refer to SPD #10.06.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$250

Contact: Consult your local DIGITAL sales office (see Introduction).

RT-11 2780/3780 Protocol Emulator

PDP-11 Operating System: RT-11

Keywords: • Data conversion • File transfer • Networking

This protocol emulator (PE) provides communications capabilities similar to IBM 2780 and 3780 remote batch terminals. The emulator runs under the RT-11 Foreground/Background (FB) or Extended Memory (XM) monitor as either a foreground or background job. The emulator accepts commands interactively or from indirect command files. Commands are provided for operation in unattended environments. The emulator supports operation of a single full- or half-duplex synchronous point-to-point line at transmission speeds up to 9600 bits a second on an otherwise idle system (maximum line speed on the PDT-11 is 4800 bits a second). Support for automatic answer to incoming calls is also available for use with modems that provide such capability.

The communications discipline implemented by the RT-11 2780/3780 PE is a subset of IBM's Binary Synchronous Communications (BSC) protocol, which uses the EBCDIC transmission code. Horizontal-format control records can be received and processed. A subset of vertical-format control escape sequences is supported: single, double, and triple space, form feed, and space suppress. Any block-addressable storage device supported by RT-11 can be used as a source of transmission files. Both fixed-length (80-character card image) and variable-length data can be transmitted as either EBCDIC (automatically translated from ASCII) or binary data (no translation). BSC control characters are automatically added to the data before transmission and are stripped on reception. Any block-addressable storage device or line printer supported by RT-11 can be used to receive files.

Refer to SPD #10.16.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$80 - \$5400

Contact: Consult your local DIGITAL sales office (see Introduction).

SBC-11/21 Downloader

PDP-11 Operating System: CTS-300, RT-11

Keywords: • Asynchronous communication • Debugging
• Down-line loading • File transfer

SBC-11/21 Downloader permits program load modules (.LDA file type) to be down-loaded from an RT-11 system to an SBC-11/21 system by way of a serial asynchronous communication line. SBC-11/21 software replaces the KXT11-A2 MACRO-ODT option. The RT-11 portion of the down-loader software requires multiterminal support.

Price: \$300 - \$500

Contact: J. Lorin Sickafoose
(216) 666-0085
SYSTEMS DATA, INC.
P.O. Box 4297
Akron, OH 44321

SP (Serial Port I/O Handler)

PDP-11 Operating System: RT-11, TSX-PLUS™

Keywords: • Device drivers/handlers

Memory required: approximately 1.0KB to 1.5KB.

The SP handler provides for full-duplex I/O on up to eight serial interface ports at one time. In particular, single-character transfers are possible, without the overhead of multiple I/O requests and without the need for privileged mapping on the user program, which would provide access to the I/O page. High-speed input to a TSX-PLUS program is also provided.

Two modes of operation are possible. The output-only mode, which uses the DC1/DC3 (X-ON/X-OFF) protocol, is invoked by a keyboard COPY command, a FORTRAN WRITE statement, or a .WRITE programmed request in MACRO. The full-duplex mode, which has various protocol options, is available only through the .SPFUN programmed request in MACRO. At any one time, up to eight serial ports can be active, performing either output or full-duplex I/O; any one job can be communicating with more than one serial port, and a number of different jobs can be communicating with the handler. This multiple-job capability is particularly useful in RT-11XM and TSX-PLUS applications. A user's manual is included as documentation on the media. DECUS number 11-672.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

SPEAKR: Vented-Box Speaker Enclosure Calculator

PDP-11 Operating System: RSTS, RT-11

Keywords: • Calculation aids • Device drivers/handlers
• Signal processing

Memory required: 4KW.

The SPEAKR program allows you to design a vented (ported) box speaker enclosure, provided you know three parameters about the driver: Qts (total driver Q factor), Fs (driver resonant frequency), and Vas (compliance equivalent volume). SPEAKR calculates the volume of the box (Vb), the diameter of the port (Dv), the length of the port (Lv), the peak or sag in the cabinet response (R), the -3dB cut-off frequency of the box ($F3$), and the resonant frequency of the enclosure (Fb). All measurements are in international units: volume in liters, length in centimeters, and response in dB. DECUS number 11-566.

Restrictions: The program was written for VT100 (ANSI) mode, but the user can patch one line in sources for either VT52 or hard-copy mode.

Note: This program uses Keele's approximation method.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

SRPRDR (Serial Protocol Driver)

PDP-11 Operating System: CTS-300, RT-11

Keywords: • Data conversion • Device drivers/handlers
• Scientific

SRPRDR is an asynchronous serial protocol driver specially designed to link DIGITAL's PDP-11/LSI-11 with processors and computers of other brands. SRPRDR uses the DLV-11 serial line interface and runs under RT-11. SRPRDR is interrupt driven and block oriented (1 block \leq 255 bytes). The protocol includes checksum.

Price: S. Fr. 2500

Contact: Max Ryser or H. P. Bader
65-31 11 31

BORER ELECTRONICS AG
P.O. Box 148
CH-4501 Solothurn Switzerland

TA.MAC: Very Friendly Serial Device Handler

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers

Memory required: 451 words.

This general-purpose handler for extra terminals, graphics devices, and modems can be used with standard SYSGEN files, including memory-management and non-memory-management options. Standard terminal SET commands include PAGE/NOPAGE and

SCOPE/NOSCOPE. Also, an ECHO/NOECHO SET command is included for some remote computer I/O where an echo is unwanted.

The handler exits a paged state if a CTRL/C is typed from the console terminal. Instructions are included for writing additional handlers that can run concurrently with TA.MAC and that have the same operating characteristics, as well as details on use with FORTRAN programs. FORTRAN compatibility is enhanced by eliminating the delays usually involved with the necessary REWIND commands. Instructions are also provided for use with foreground/background monitor in the foreground. DECUS number 11-571.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

TANGO

PDP-11 Operating System: ULTRIX-11

Keywords: • File transfer • Networking • Personal computing
• Telecommunications

This communication software connects IBM, AT&T, and compatible PCs with UNIX*-based computers. MS-DOS commands and programs on PCs are executed under control of UNIX* hosts. File transfer uses standard error-correction protocols with automatic conversion between UNIX* and MS-DOS file formats. Terminal emulation of DIGITAL, IBM, and Tektronix (full graphics capabilities) terminals are selectable from the UNIX* host.

Tango uses a standard RS-232 serial port on the PC and connects to the UNIX* computer through a modem or direct connection.

A version of this product is available for VAX computers.

Price: \$195 - \$295

Contact: Jeff E. Spencer
(313) 665-8778

COMPUTERIZED OFFICE SERVICES INC.

313 North First Street

Ann Arbor, MI 48103

TC (Total Communicator)

PDP-11 Operating System: Independent

Keywords: • Electronic mail • Telecommunications

The TC is a store-and-forward message switch/information distributor for transmitting information to or from any terminal or computer device to any other, including Telex, TWX, or dial-up units, regardless of location or distance. The TC can automatically send messages or data to another location, selecting available communications channels, addresses, and formats, as well as providing verification of delivery. The TC will batch messages, when applicable, to increase line efficiency and reduce costs. For incoming messages, the TC accepts, stores, logs, and routes the data. Records are kept on all activity, and any transmission can be retrieved for audit or review.

1350 Systems Communications

The heart of the TC is a fully programmed store-and-forward message-switching system, including disk storage, printing capability, and communications multiplexers.

A version of this product is available for VAX computers.

Price: \$40,000 +

Contact: Mitch Maloof

(201) 567-3125

SYSTEMS & PROGRAMMING INT'L, INC.

177 N. Dean Street

Englewood, NJ 07631

TDDRV (TDC 2000 Driver)

PDP-11 Operating System: RSX

Keywords: • Device drivers/handlers

The TDDRV, a loadable driver that controls communication between the Honeywell GPCI and the PDP-11/34 through a DR11-K interface, supports control (write) and scan (read) functions. Direct (unsolicited) inputs are ignored. The functions IO.KIL, IO.ATT, and IO.DET are legal but ignored. Legal I/O operations will be attempted three times before an error condition is returned.

Price: \$4500

Contact: Robert C. McGill

(713) 869-9371

HOUSTON ENGINEERING RESEARCH CORP.

7250 Wynnwood, Houston, TX 77008

P.O. Box 3246, Houston, TX 77253-3246

Tektronix 8001/8002/8550 Communication Package

PDP-11 Operating System: IAS, RSTS, RSX, RT-11

Keywords: • File management • File transfer

• Microprocessor development

Memory required: 8KW.

This MACRO-11 routine handles intersystem communications between PDP-11/VAX hosts and the Tektronix Micro Processor Development Lab stations. The program can be conditionally assembled for RT-11, RSTS/E, or RSX operating systems. Both the formatted and unformatted transfer modes, described in the *Tektronix 8001/8002/8550 User's Manual*, are supported. Formatted transfers use the Standard Tektronix Hexadecimal Format (TEKHEX). System interconnection is made through the standard RS-232-C terminal interface port on the PDP-11 or VAX host.

The *Tektronix 8001/8002/8550 Microprocessor Development Lab User's Guide* is available through your Tektronix sales representative.

Documentation is on magnetic media. DECUS number 11-SP-24.

A version of this product is available for VAX computers.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

TEM (Terminal Emulator for RSX-11)

PDP-11 Operating System: RSX

Keywords: • File transfer • Networking

Memory required: 13KW.

TEM provides "dumb" terminal emulation over a full-duplex TT: line, allowing the user to "become" a terminal on a remote system and to do ASCII file transfer between systems. TEM has been used to communicate with TSX, VMS, and TOPS-20 systems, as well as with non-DIGITAL equipment. TEM requires no software on the remote system and therefore has no error checking.

In addition to the basic functionality, TEM can automatically issue canned commands to smart modems at the beginning and end of a session. DECUS number 11-750.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

TEMPRO

PDP-11 Operating System: RT-11

Keywords: • File transfer

Memory required: 6KW.

This MACRO-11 program for PDP-11s running RT-11 allows the PDP-11 to act as a remote terminal for a VAX and also to transfer files to and from the VAX. DECUS number 11-561.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Tenny Electronic Bulletin Board Message Mailing Facility

PDP-11 Operating System: RT-11

Keywords: • Electronic mail • List processing • Networking

Memory required: 12KB.

The board facility allows mail to be sent to user and group accounts. All mail is password protected and clearance coded for total protection.

Mail can be sent to any user with or without a dedicated terminal, to a group (sales, owners, and so on), or to all users for general announcement messages. When the group option is used, the mail can be dated to autodelete in a user-allotted amount of time. Messages can also be directed to any printer for hard copy and then deleted as desired.

A maintenance utility is provided to maintain the group and user accounts, as well as an update program to autodelete group messages that have passed their "days to display." DECUS number 11-608.

Restrictions: An ISAM file (single key) must be used.

A version of this product is available for VAX computers.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

TERM.FOR: Smart Terminal Program for MINC

PDP-11 Operating System: RT-11

Keywords: • Disk utilities • Mapping

This FORTRAN program converts a MINC with a standard DLV-11J serial controller into a smart terminal. The program allows the MINC console operator to converse with a time-share system at up to 1200 bps. Data from the time-share system can be directed to the MINC console and, under user control, to the line printer or a disk file. A disk file can also serve as the source of data for the time-share computer. Disk files can be reallocated without interrupting the time-share activity. DECUS number 11-462.

Restrictions: Must have multiterminal support for RT-11.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

TSTE (Time-Share Terminal Emulator)

PDP-11 Operating System: RT-11

Keywords: • Asynchronous communication • File transfer
• Telecommunications

Memory required: 4KW.

This program is a communications interface between a PDP-11 and General Electric Company's Mark III Foreground Service, available through telephone worldwide. Operating at a nominal 300 baud, TSTE allows your data processing capabilities to be used with the G.E. service, thereby reducing your hourly cost, character transmission fees, and file storage charges. Those savings are realized through off-line input file building, editing, and storage. You can edit or reformat your output before hard copy and relocate some of the smaller data processing tasks to your equipment.

This TSTE program supports on-line device and file specification, has hardware-independent terminal echo for all transactions, and provides user messages and prompts to indicate program status. The program's concept and methods can be applied to any time-share service, with minor changes to allow for communications protocol. The coding affected is documented in the source file. DECUS number 11-383.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

TYCHO/HASP

PDP-11 Operating System: RSTS

Keywords: • File management • Networking
• Operating systems

TYCHO/HASP integrates a shareable emulation of the HASP workstation into VMS or RSTS/E systems for Remote Batch Job Entry

(RJE) to IBM or CDC mainframes that support HASP. This system can be installed on PDP-11/24 through 11/70 models under RSTE/E and on VAX-11s under VMS.

RJE functions are available to all logged-in users concurrently with VMS or RSTS time-sharing services. DIGITAL standard disk structures and user disk areas are used. A management/queuing subsystem permits users to enter and launch RJE jobs from their disk areas, route returns to a VMS or RSTS printer or back to their disk areas, and monitor the status of RJE jobs from their keyboards. Heavy line printer returns can be streamed directly from memory to a system printer, bypassing disk I/O. Once launched, RJE job submissions to and returns from the remote site are managed automatically, whether or not the user remains logged in. Hooks for interface with the system manager's software are provided, as are printer forms management subsystems.

The required dedicated hardware is one DUP11. Options include support for a KMC11, combined with the DUP11, or DMF32 for higher performance. Line speeds are from 2.0 to 19.2 kbps. No front-end CPU is required.

A version of this product is available for VAX computers.

Price: \$5000

Contact: D. Marie Jantzi
(519) 679-1367

TYCHO RESEARCH ASSOCIATES, INC.
995 Waterloo Street
London, Ontario N6A 3X4 Canada

UAP-LINK

PDP-11 Operating System: RSTS, RSX, RT-11, VENIX™

PRO Operating System: P/OS, TSX-11

Keywords: • Data conversion • File management
• File transfer

This communications file transfer software family is designed to move binary or text files between mixed or matched computers, using standard ports. A reliable protocol corrects line errors and compresses transmitted data, saving you time and money. Files are ready to be used as stored; no conversion programs are necessary. Configurations can be high-performance local connections, with minimum impact on multiuser systems, or across the nation, using low-cost modems.

UAP-LINK's virtual user facility permits remote time-sharing system commands to be stored in a local command file. You can easily develop automatic procedures to LOGON to the remote system, INJECT several commands, EXECUTE the host module, TRANSFER several files, LOGOFF, and DISCONNECT from the modem to greatly simplify your job. Additional features include data compression, independent device defaults, file protection, and a smart-terminal mode.

VENIX™ is a trademark of VenturCom, Inc.

A version of this product is available for VAX computers.

Price: \$250 – \$1250

Contact: W. T. DeRouchey
(714) 259-1012

UNIQUE AUTOMATION PRODUCTS

15401 Redhill, Suite G
Tustin, CA 92680

UN1004/RXS

PDP-11 Operating System: RSX

Keywords: • Down-line loading • Networking

This PDP-11-based software package provides communication with a UNIVAC 1100 series or other host computer systems capable of using UNIVAC 1004 RMS-1 communications protocol. The software operates under the RSX-11M operating system and provides remote job entry terminal emulation capability. UN1004/RXS communicates with the host, using the RMS-1 communications protocol supporting ASCII line codes.

UN1004/RXS provides for one synchronous communications circuit to a host computer system. The product supports a single switched or dedicated leased line, 2- or 4-wire common carrier facility at transmission rates up to 4800 bps.

The product provides the capability to send data in 80-column card format and to receive data in line format or card format. Data transfers are controlled by console commands entered at the emulated terminal. The emulator permits the terminal operator to direct received data to any RSX-11M system-supported device.

Logical terminal emulation is independent of a physical system terminal. Logical terminal assignment is provided and released by the terminal operator. The product supports ASCII line communication codes.

Refer to SPD #10.79.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$4000 – \$12,700

Contact: Consult your local DIGITAL sales office (see Introduction).

UNIVAC NTR

PDP-11 Operating System: RSX

Keywords: • Networking • Telecommunications

This subsystem for UNIBUS-based computers provides data transfer by means of a DMA facility and dual-host support.

A version of this product is available for VAX computers.

Price: \$8000

Contact: Mogens Poulsen
01-20 00 66

A/S DATALOG
Rygaards Alle 104
DK-2900 Hellerup Denmark

UNIVAC UTS400

PDP-11 Operating System: RSX

Keywords: • Networking • Telecommunications

The UNIVAC UTS400/U200/DCT1000 subsystem for UNIBUS-based computers includes a DIGITAL multiplexer from 8 to 16 channels, DMA data transfer, dual-host support, and full-screen buffer facility emulated on a VT100 terminal.

A version of this product is available for VAX computers.

Price: \$11,500

Contact: Mogens Poulsen
01-20 00 66

A/S DATALOG
Rygaards Alle 104
DK-2900 Hellerup Denmark

UNIX* MASCOT

PDP-11 Operating System: ULTRIX-11

Keywords: • Real time • Scheduling

These kernel modifications and user programs provide extended inter-process communication and real-time scheduling capabilities within UNIX*.

* UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for VAX computers.

Price: \$2000

Contact: Douglas J. Ross, Vice President
(613) 548-4355

ANDYNE COMPUTING LTD.
554 Princess Street, Suite 202
Kingston, Ontario K7L 1C7 Canada

VAMP

PDP-11 Operating System: RT-11

Keywords: • File transfer • Programming tools

VAMP provides your RT-11-based system with fast, efficient, and completely transparent access to VAX/VMS. Applications communicate directly with VMS files, allowing the user the advantages of the VMS file structure. File format conversion is often performed automatically within commands. Most VAX/VMS tasks can be performed from your RT-11, STAR, or SHARE terminal.

This product was written and is owned by Hammond Software and has a 90-day warranty. Source codes and back-up copies are not available.

Price: \$1000 - \$7000

Contact: Ewald Müssig
+49 551 21044

HAMMOND SOFTWARE
Stiegbreite 1
3400 Göttingen West Germany

VIDEOPRO

PDP-11 Operating System: ULTRIX-11, VENIX™

Keywords: • Device drivers/handlers • Graphics

Memory required: 128K.

This C-language decoder is for microprocessors supporting UNIX* or a UNIX*-like operating system or for a suitable C compiler to enable the micro to function as a videotext terminal. VIDEOPRO occupies less than 20K of code and complies with the NAPLPS SRM (Service Reference Model). VIDEOPRO features the use of independent internal routines and files, such as graphics editing; an unlimited number of colors, such as 16M plus; unlimited resolution; and use of independent tables to configure the processor and the data base.

VENIX™ is a trademark of VenturCom, Inc.

A version of this product is available for VAX computers.

Price: \$149

Contact: Richard B. MacKay
(416) 962-3828

SANDFORD COMPUTER SYSTEMS
73 Walker Avenue
Toronto, Ontario M4V 1G3 Canada

Virtual Disk

PDP-11 Operating System: RSX, RT-11

Keywords: • Disk utilities • File management • Networking

Memory required: 4KW host, 1KW satellite.

This program eliminates floppy disks or other hardware storage devices at LSI-11s networked with a PDP-11 host. The virtual disk runs on the RSX-11M operating system, which can serve up to 32 satellites.

Price: \$2000 - \$25,000

Contact: Carl Rohr
(203) 544-9371

COMPUTROL
15 Ethan Allen Highway
Ridgefield, CT 06877

VN**PDP-11 Operating System:** CTS-300, RT-11, TSX-PLUS™**Keywords:** • Device drivers/handlers • Disk utilities

The VN package provides a standard RT-11 interface to 22-bit memory beyond the 18-bit boundary in a PDP-11/34 computer system equipped with the ENABLE/34 manufactured by Able Computer of Irvine, California. The ENABLE/34 permits a PDP-11/34 to address memory beyond the 18-bit limit of the PDP-11/34. The VN handler allows the memory beyond the 18-bit boundary to be treated by RT-11 as simply another device called VN. That device may be thought of as an RT-11 directory-structured device. Files may be copied to and from VN. The VN device may also be a system device. Thus, a bootstrap may be created and saved on device VN.

As memory access is normally significantly faster than disk access, the VN device may be thought of and treated as a very fast disk. Benchmark runs indicate that most programs execute in one-half to one-tenth the time taken when using hard disk systems.

The VN device may be treated as a bootable device under all RT-11 monitors, including the extended memory monitor (RT11XM).

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$450

Contact: Peter McWha, General Manager
(613) 225-8750

LOGICAID LTD.

154 Collonnade South

Nepean, Ontario K2E 7J5 Canada

VSV11-M/M-PLUS Driver**PDP-11 Operating System:** RSX**Keywords:** • Device drivers/handlers • Graphics

This driver provides all the I/O services required for communication between an RSX-11M/M-PLUS host and a VSV11/VS11 graphics subsystem. The driver is conditionally resident or loadable and will operate with or without PDP-11 memory-management hardware.

The driver enables the user to communicate with the VSV11/VS11 using:

- The QIO executive directive in a MACRO assembly language program or a FORTRAN IV or FORTRAN-77 program
- AST executive services for user notification of interrupt generation associated with use of the VSV11/VS11 joystick

The VSV11-M/M-PLUS Driver features:

- Execution of a display file containing VSV11-specific graphics instructions
- Ability to attach or detach the VSV11 for individual use

- On-demand use of an auxiliary memory segment that contains VSV11/VS11 instructions, providing extended addressing to the VSV11/VS11
- Reading of cursor location coordinates
- Read-back of pixel data from the VSV11/VS11 screen
- Execution of STOP/RESUME display file
- Linkage to AST routines that are queued to the user task when the driver receives a joystick associated interrupt

Refer to SPD #14.53.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

VT (Virtual Terminal)

PDP-11 Operating System: RT-11, TSX-PLUS™

Keywords: • File transfer • Networking • Telecommunications

VT extends a communication path between its host and virtually any remote computer system and permits users to interact with both the host and the remote systems and to transfer text files in either direction. Because VT requires no special software at remote sites, it is especially useful in accessing service bureaus, such as CompuServe or MCI Mail. VT features a high-level command language, support for auto-dialing modems, and software control over communication line parameters, including transmission speed, transmit/receive parity, XON/XOFF processing, and local character echo.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$650

Contact: Jack J. Peterson
(804) 740-9244

HORIZON DATA SYSTEMS
1901 Wildflower Terrace
Richmond, VA 23233

VTERM III

PDP-11 Operating System: RSTS, RSX, ULTRIX-11

Keywords: • Asynchronous communication • File transfer
• Networking

This asynchronous communications software, written in assembly language, allows the IBM PC, XT, AT, 3270, and compatibles to talk to DIGITAL's minis and mainframes at speeds up to 9600 baud. VTERM emulates DIGITAL's VT100/101/102/52 terminals and enables a user to run DIGITAL software (EDT, TECO, WORD-11, EMACS, and so forth) on the PC and to link up to data services, such as The Source. File transfer features source software that is transferable to DIGITAL host supports, such as VMS, RSTS, RSX-11, and UNIX,* thereby allowing a user to transfer binary files; CRC-16 error detection; and file-transfer protocols, including XMODEM and KERMIT. A user can toggle

switches between DOS and VTERM while leaving the terminal screen and the communications link intact. VTERM offers VT1xx-AC/VT102 printer support, a set-up display accessible at any time, an unlimited number of set-up files, 20 programmable/linkable soft function keys, and a true 132-column display. Versions for the TI Professional, the Eagle PC, and the Eagle 1600 are available, but they support ASCII file transfer only.

* UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for VAX computers.

Price: \$160

Contact: Robert Sacks
(212) 777-6707
COEFFICIENT SYSTEMS CORP.
611 Broadway
New York, NY 10012

VTERM (Virtual Terminal Program)

PDP-11 Operating System: RSX

Keywords: • Asynchronous communication • File transfer

This program enables a user to communicate asynchronously over a serial line with another computer. The RSX user's VT100-type terminal appears to be directly connected to the other system. All keystrokes from the RSX terminal are transmitted to the other computer, and all characters from the other computer are displayed on the RSX terminal. The program can also transmit and receive files over the serial line. XON/XOFF is supported. The program can be used with a protocol converter to communicate synchronously with mainframe systems. The source languages are MACRO-11 and FORTRAN.

Price: \$500

Contact: Kenny Purcell
(205) 536-8581
REMTECH, INC.
2603 Artie Street
Huntsville, AL 35805

VTERM (Virtual Terminal Support): MINC BASIC/FORTRAN IV

PDP-11 Operating System: RT-11

Keywords: • File transfer • Software utilities

This set of programs provides virtual terminal support to a host system. The term "virtual" denotes a terminal that appears to be coupled to the host machine directly but in fact is not. Provision has been made for ASCII file transfer to and from the MINC system.

Two sets of programs are included: one for MINC/BASIC users and one for FORTRAN users. DECUS number 11-417.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

VTERM/4010**PDP-11 Operating System:** RSTS, RSX, ULTRIX-11**Keywords:** • Asynchronous communication • File transfer
• Networking

This asynchronous communications software, written in assembly language, allows the IBM PC, XT, AT, 3270, and compatibles to talk to DIGITAL's minis and mainframes at speeds up to 9600 baud. VTERM emulates DIGITAL's VT100/101/102/52 and Tektronix 4010/4014 terminals; enables the PC user to run mainframe graphics applications from SAS, ISSCO, Tektronix (PLOT10), Precision Visuals, and so forth; and saves pictures on disk and draws them on H-P and IBM plotters. A user can also run DIGITAL software (EDT, TECO, WORD-11, EMACS, and so forth) and link up to data services, such as The Source. File transfer features source software that is transferable to DIGITAL host supports, such as VMS, RSTS, RSX-11, and UNIX,* thereby allowing a user to transfer binary files; CRC-16 error detection; and file-transfer protocols, including XMODEM and KERMIT. A user can toggle switches between DOS and VTERM while leaving the terminal screen and the communications link intact. VTERM offers VT1xx-AC/VT102 printer support, a set-up display accessible at any time, an unlimited number of set-up files, 20 programmable/linkable soft function keys, and a true 132-column display. Versions for the TI Professional, the Eagle PC, and the Eagle 1600 are available, but they support ASCII file transfer only.

* UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for VAX computers.

Price: \$249**Contact:** Robert Sacks
(212) 777-6707COEFFICIENT SYSTEMS CORP.
611 Broadway
New York, NY 10012**VTUMC (Virtual Terminal Routine for UNIVAC 1100 Systems)****PDP-11 Operating System:** RT-11**Keywords:** • Asynchronous communication • File transfer
• Graphics

This RT-11 program facilitates asynchronous serial communications between a VT125/VT100 console and a UNIVAC 1180 mainframe. In primary mode, the program enables direct character-by-character communication between the console and the mainframe and is almost entirely transparent to the user. The program also up-loads ASCII text files line by line in accordance with mainframe prompts and displays the transactions on the console. In each of those modes, a transcript, consisting of all communication received from the mainframe, is stored on the default storage device. Since some UNIVAC systems do not echo

characters, the program can be set to provide its own echo. That setting, along with the baud rate, can be changed during a session with the mainframe. The program also enables the user to annotate the transcript during the mainframe session and to scroll throughout the entire record of communications. Some program features were prepared to interact with programs written for the UNIVAC mainframe: one mode accesses the mainframe for the date and time and stores that information in the local system; a second mode brings up a previously received graphics image and enables the user to first position a set of superimposed cross hairs over the image, using the arrow keys, and then transmit that position to the mainframe as graphic input. The routine also reloads the terminal setup and the graphics macros during a session and provides date and time information, along with the number of blocks of storage still available for the session transcript.

Price: Available upon request

Contact: Arthur B. Callahan

(617) 275-6800

QEI, INC.

119 The Great Road

Bedford, MA 01730

X25-LAPB/HDLC-BAC

PDP-11 Operating System: RSX

Keywords: • Networking • Telecommunications

The X25-LAPB, a communication subsystem for UNIBUS-based computers, provides data transfer by way of a DMA facility and supports full-duplex X.25-LAPB link-level protocol (ISO HDLC balanced operation, asynchronous mode) in firmware. Data throughput exceeds 64K bps.

Price: \$8000

Contact: Mogens Poulsen

01-20 00 66

A/S DATALOG

Rygaards Alle 104

DK-2900 Hellerup Denmark

X.Dot™

PDP-11 Operating System: Independent

PRO Operating System: Independent

Keywords: • Networking

X.Dot, developed by The Community Memory Project, is a line of communications software technology transfer products. X.Dot is a portable C-language interface that connects your computer to public or private X.25 packet-switching networks. X.Dot PAD supports the CCITT Recommendations X.3, X.25, and X.29. The X.Dot products are easily portable to any hardware, requiring only a C compiler. Software tools to facilitate installation and certification are provided.

X.Dot™ is a trademark of The Community Memory Project.

A version of this product is available for VAX computers.

Price: \$30,000 +

Contact: Susan Blumstein

(415) 540-5000

X.DOT CORP.

Tenth and Parker

Berkeley, CA 94710

XFR/XSL — RSX to RSX Communications Utility

PDP-11 Operating System: RSX

Keywords: • Diagnostics • File transfer • Software utilities

Memory required: 18KW.

XFR/XSL is a "master/slave" communications package for "virtual terminal" and file transfer capabilities between PDP-11s running RSX-11M. The package runs through a serial line (direct or through modems) between the two PDP-11s and allows a user at one machine to "talk through" that machine to the other and to transfer ASCII files in either direction. XFR/XSL is designed to run at 300 or 1200 baud but could be modified to transfer files at 9600 baud or to run on other operating systems. The well-documented programs are written in FORTRAN, using QIO calls, and the file transfer protocol includes good error-checking and recovery mechanisms. DECUS number 11-527.

Restrictions: Virtual terminal mode maximum speed is 1200 baud.

Note: QIO calls need to be modified to run on most other operating systems.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

XNS/ITP (Xerox Network Systems Internet Transport Protocols)

PDP-11 Operating System: RSX

Keywords: • Networking • Personal computing

• Telecommunications

This complete implementation of the XNS/ITP specifications provides task-to-task communications among VAX/VMS, RSX-11M/M+, 68000/UNIX* System V, and MS-DOS systems in an internetworking environment. Designed to take advantage of Ethernet's low-delay, high-bandwidth capabilities, the NS4200 series of XNS/ITP products are based on a portable implementation written in C in either binary or source code form. A software update service provides a 1-year subscription to code improvements and enhancements. Network management facilities are built into Interlan's NET/PLUS products, and each product includes a network management utility (NETMGR) for displaying more than 40 statistics from a local or remote host.

* UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for VAX computers.

Price: \$500 – \$25,000

Contact: William M. Seifert

(617) 692-3900

INTERLAN, INC.

3 Lyberty Way

Westford, MA 01886

YH for DH11/DHV11

PDP-11 Operating System: CTS-300, RT-11, TSX-PLUS™

Keywords: • Asynchronous communication

• Device drivers/handlers • Networking

This set of programs provides multiline access to a DH11 or DHV11 multiplexer under the RT-11 operating system, which does not support the DH11 or DHV11. Each device attached to the multiplexer can be accessed using a device name, typically YH0 to YH7. Thus, all RT-11 utilities can be used to access those devices. For example, to transfer a file to a serial device attached to line 3 of the multiplexer, the user would use the RT-11 keyboard monitor command "COPY FILE.EXT YH3:".

The YH handler also provides a facility that supports user-written multiterminal or multiline applications, which include data base management systems, real-time numerical control supporting more than one device, specific robot functions that are controlled by a separate serial line, and so on. User-written applications issue .READs and .WRITEs from the program, as documented in the RT-11 manuals.

The YH handler can be generated by using an RT-11-equivalent conversational SYSGEN process. The handler supports XON/XOFF line protocol, DM11 and DMV11 modem controls, and the DH11 and DHV11 multiplexers. With the DH11, the handler supports 16 lines; the upper eight are accessed as devices YG0 to YG7. The handler also provides DMA transfers on output, which avoids internal buffering in the handler. On input, the handler supports byte-count protocols and differentiates between scope and nonscope terminals. Finally, the handler can support type-ahead.

The handler supports an echo/noecho feature under program control. The user can also set line parameters (speed, character size, and so on) under program control or by using a conversational program provided with the package. The user of a multiterminal system can abort processes in progress with a "cancel" feature that is similar to the RT-11 console CTRL/C.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$450

Contact: Peter McWha, General Manager

(613) 225-8750

LOGICAID LTD.
154 Collonnade South
Nepean, Ontario K2E 7J5 Canada

YL for DLV11J

PDP-11 Operating System: CTS-300, RT-11, TSX-PLUS™

Keywords: • Asynchronous communication
• Device drivers/handlers • Networking

This set of programs provides multiline access to a DLV11J or DLV1J serial line interface under the RT-11 operating system. Each device attached to the serial line interface can be accessed by using a device name, typically YL0 to YL3. Thus, all RT-11 utilities can be used to access those devices. For example, to transfer a file to a serial device attached to line 2 of the serial line interface, the user would use the RT-11 keyboard monitor command "COPY FILE.EXT YL2:".

The YL handler also provides a facility that supports user-written multiterminal or multiline applications, including data base management systems, real-time numerical control supporting more than one device, specific robot functions that are controlled by a separate serial line, and so on. User-written applications issue .READs and .WRITEs from the program, as documented in the RT-11 manuals.

The YL handler can be generated by using an RT-11-equivalent conversational SYSGEN process. The handler supports all terminal types, including those with only uppercase abilities, those requiring fill characters, and those requiring software tab expansions. The handler also supports XON/XOFF line protocol and type-ahead. On input, YL differentiates between scope and nonscope terminals and supports byte-count protocols.

The YL handler includes an echo/noecho feature under program control and a "cancel" feature, similar to the RT-11 console CTRL/C, that allows a user to use a multiterminal system to abort processes in progress.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$450

Contact: Peter McWha, General Manager
(613) 225-8750

LOGICAID LTD.
154 Collonnade South
Nepean, Ontario K2E 7J5 Canada

YZ for DZ11/DZV11

PDP-11 Operating System: CTS-300, RT-11, TSX-PLUS™

Keywords: • Asynchronous communication
• Device drivers/handlers • Networking

This set of programs provides multiline access to a DZ11 or DZV11 multiplexer under the RT-11 operating system. Each device attached to the multiplexer can be accessed by using a device name, typically

YZ0 to YZ7. Thus, all RT-11 utilities can be used to access those devices. For example, to transfer a file to a serial device attached to line 3 of the multiplexer, the user would use the RT-11 keyboard monitor command "COPY FILE.EXT YZ3:".

The YZ handler also provides a facility that supports user-written multiterminal or multiline applications, such as data base management systems, real-time numerical control supporting more than one device, specific robot functions that are controlled by a separate serial line, and so on. User-written applications issue .READs and .WRITEs from the program, as documented in the RT-11 manuals.

The YZ handler can be generated by using an RT-11-equivalent conversational SYSGEN process. The handler supports all terminal types, including those requiring fill characters, software tab expansions, XON/XOFF line protocol, and those with only uppercase abilities and dial-up lines, including program control hangup. The handler also supports type-ahead and features echo/noecho under program control. On input, the handler differentiates between scope and nonscope terminals and supports byte-count protocols.

The YZ handler allows the user to set line parameters, such as speed, character size, and so on, under program control or by using a conversational program provided with the package. The user can also use a "cancel" feature, similar to the RT-11 console CTRL/C, that aborts processes in progress.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$450

Contact: Peter McWha, General Manager
(613) 225-8750
LOGICAID LTD.
154 Collonnade South
Nepean, Ontario K2E 7J5 Canada

Text Management



Cary Wolinsky/Stock, Boston

A-to-Z Word Processing

PDP-11 Operating System: Micro/RSX

Keywords: • A-to-Z • Office systems • Word processing

A-to-Z Word Processing is a DECmate-style word processing application providing most of the features of the DECmate and WPS-8. Experienced WPS or DECmate users can adapt easily to A-to-Z Word Processing.

A-to-Z Word Processing permits integrated word and data processing in a multiuser environment, thereby extending a data processing system with word processing capabilities. The A-to-Z Word Processing editor creates and maintains documents stored on the A-to-Z Integrated System. Storage available for documents will vary, depending on other storage requirements.

A-to-Z Integrated System is prerequisite.

Refer to SPD #18.18.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$400

Contact: Consult your local DIGITAL sales office (see Introduction).

CLE and BCE: Command Line Editors for RSX-11M

PDP-11 Operating System: RSX

Keywords: • Programming tools

CLE, which runs only on VT100-series terminals, allows you to edit your MCR and DCL commands before passing them to the command line interpreter. The keypad editing commands are delete to end/beginning of line, undelete line, undelete/delete word, undelete/delete character, skip word, go to end/beginning of line, retype line (CTRL/R), cancel line (CTRL/U), and help display (as in EDT V2 under PF2). The program "stacks" four previous commands, which you can recall with the up- and down-arrow keys.

BCE is the same as CLE but allows you to store often-used commands in a file (CLEINI.CLE). The commands can be invoked by typing control keys or gold keys (as in EDT V2). DECUS number 11-598.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

CLE: Command Line Editing and Storage Utility for RSX-11M

PDP-11 Operating System: RSX

Keywords: • Development tools • Software utilities

Memory required: 3.5KW.

CLE is an interface to the actual CLI, which remembers the last commands so that they can be recalled and edited after an error or modified for reuse. CLE also allows for up to 10 commands to be stored in a temporary buffer for later use either individually or as a group. CLE executes some commonly used commands with a single control character.

CLE runs with RSX-11M Version 3.2 and 4.x and supports MCR, DCL, and user-CLIs. No special type of terminal is required. DECUS number 11-755.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

COMPAG

PDP-11 Operating System: RT-11

Keywords: • Printing

Memory required: 8K.

COMPAG allows the user to format the output in columns across a page. The program was designed for use with RUNOFF output files. DECUS number 11-496.

Note: The output file contains tabs rather than multiple spaces where possible to minimize its size.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

COMPAG: Combine Pages for the Professional 300

PRO Operating System: RT-11

Keywords: • Printing

COMPAG provides the ability to easily combine pages so they can be spread across a printer form rather than take up a page each. The system can use up to eight columns within the output page, the size of each column being determined by the width of the page. Alternatively, a series of left margins can be specified, one for each column in sequence.

Tab conversion is usually performed on the output file to reduce size, using the DIGITAL standard for hardware tabs. Underscoring in the input file is retained in the output.

COMPAG was designed to be used with RUNOFF output files but will work with any files. DECUS number PRO-106.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

COMPOSE: VT200 Custom Character Set Generator Program

PDP-11 Operating System: RSX

Keywords: • Presentation aids • Printing

Memory required: 15,264 words.

This program, written in FORTRAN-77 and MACRO-11, allows users to design and automatically generate custom character sets for VT200 terminals. Output consists of a FORTRAN direct-access file that contains the character definitions in binary form and a test file that can be typed at an appropriately configured VT200 terminal to create the custom character set. An example of files used to generate the APL character set is included. DECUS number 11-760.

1370 Text Management

Price: \$5 - \$225

Contact: DECUS (see Introduction)

CT*OS Spelling Corrector

PDP-11 Operating System: RSTS, RSX, RT-11, TSX-PLUS™

PRO Operating System: P/OS

Keywords: • Data dictionary • Word processing

This high-performance, 100% accurate interactive spelling corrector finds any word that is in the dictionary. If a word is not in the dictionary, the word will not be accepted without your consent. CT*OS checks more than 80 words a second on documents of several thousand words or more, interacts with you, and replaces misspelled words in the document, rather than mark them for later editing.

The CT*OS Spelling Corrector main dictionary contains more than 87,000 entries. Any properly formatted dictionary may be implemented, using the supplied dictionary rebuilding utility. CT*OS Spelling Corrector automatically creates a personal dictionary containing a permanent record of all words that did not appear in the main dictionary but that were accepted. That dictionary is then consulted, and CT*OS Spelling Corrector will not bother with jargon terms and proper names that appear in your personal dictionary from previous sessions.

The CT*OS Spelling Corrector performs an affix analysis on words that are not found in the main dictionary or in your personal dictionary. At no time, however, will CT*OS Spelling Corrector accept a word unless it is found in a dictionary in its original spelling. Instead, the word, along with a list of options, is displayed. If affix analysis is performed, the path taken by affix-analysis processing is displayed for verification.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$175 - \$500

Contact: Robin Maxell

(818) 796-9374

COMPU-TOME, INC.

234 East Colorado Boulevard

Pasadena, CA 91101

CTS-300 DECtype

PDP-11 Operating System: CTS-300

Keywords: • Printing • Word processing

This DECmate-style word processor provides most of the features of the DECmate and WPS-8. Experienced WPS or DECmate users can begin using CTS-300 DECtype immediately. CTS-300 DECtype supports the WPS keyboard so that CTS-300 DECtype users can execute most of the editing functions just as they would when using DECmate

or WPS-8. CTS-300 DEType documentation is organized and formatted to closely resemble WPS documentation. Users will be able to quickly learn any features unique to CTS-300 DEType.

CTS-300 DEType permits concurrent word and data processing in a multiuser environment that extends a data processing system with word processing capabilities. The CTS-300 DEType editor creates and maintains documents stored on the full range of disk devices supported by CTS-300/VMS. Storage available for documents will vary, depending on other data storage requirements on the same disk medium.

CTS-300 DEType features center screen editing, allowing a view of preceding and following text, and document indexing. The system prepares documents through menu-driven operation and easy-to-learn commands, has extensive editing capabilities, and supports printer utilities.

Refer to SPD #12.71.xx when requesting further information on this product from your local DIGITAL sales office.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

Data Search

PDP-11 Operating System: RT-11

Keywords: • Documentation tools

This system provides indexing for source documents and can be used in conjunction with Bell & Howell Image Capture and Image Output terminals. Documents can be indexed or cross-referenced by using up to 15 descriptors that can be autorepeatable, autoincrementing, and updatable.

Price: \$15,000 - \$25,000

Contact: Paul A. McAllister
(312) 675-7600

BELL & HOWELL
6800 McCormick Road
Chicago, IL 60645

DEType Word Processing Application

PDP-11 Operating System: CTS-300

Keywords: • Disk utilities • Word processing

DEType permits concurrent word and data processing in a multiuser environment. This feature extends the data processing system with word processing capabilities.

The DEType editor creates and maintains documents stored on the full range of disk devices supported by CTS-300 and VAX/VMS. Storage available for documents will vary, depending on other data storage requirements on the same disk media.

1372 Text Management

Refer to SPD #30.32.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for VAX computers.

Price: \$1200 - \$2000

Contact: Consult your local DIGITAL sales office (see Introduction).

DEEP (Data Entry and Editing Package)

PDP-11 Operating System: RSTS, RSX, RT-11, TSX-PLUS™

Keywords: • Data entry • File management • Report writer

This data and data file management package interfaces to spreadsheets and word processing packages to provide easy data entry, data file maintenance, and report generation utilities for such diverse applications as mailing lists, property accountability files, equipment service logs, and other structured data files. Reports can be easily generated, using all fields or selected fields of data records. Report outputs can be specified in label format or any desired format. DEEP can be used at the nonprogrammer level but incorporates a powerful metalanguage that can be used by programmers for advanced applications. The system also provides formatted screen inputs and data validation and is compatible with ANSI (VT100) terminals.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

A version of this product is available for VAX computers.

Price: \$2000

Contact: Fred Ross

(505) 524-2154

TECHNICAL SOLUTIONS, INC.

P.O. Box 1148

Mesilla Park, NM 88047

Dictionary with Phonetics

PDP-11 Operating System: RSX

Keywords: • Data dictionary • Software utilities

Memory required: 15,712 words.

This tape contains a dictionary of more than 7000 words with regular and phonetic spelling, as well as grammatical meaning. Several utilities manipulate/use this dictionary: MODFIX, to modify the dictionary interactively (contains code to listen to phonetics through the TeleSensory Systems PROSE 2000 speech synthesizer); BLDFIX, to build the dictionary; BLDDAT, to convert from direct-access to sequential file); BIGLST, to create a spoolable list file; and STRMAT, to find words in the dictionary. DECUS number 11-747.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

DOC**PDP-11 Operating System: RSTS**

Keywords: • Computer-aided instruction • Documentation tools
• Programming tools

DOC captures all user input and computer output in an easy-to-read text file. User input is underlined to distinguish it from computer output. Documentation created in that manner can be used to train system users, by showing how a program appears. DOC can also be used to expand one terminal into four effective, interactive terminals. That enables development personnel and end users to run multiple jobs simultaneously, using only one hardware terminal.

Price: \$600

Contact: Carolyn Clyde
(801) 224-5306

CLYDE DIGITAL SYSTEMS, INC.

P.O. Box 4500

Provo, UT 84603-4500

DOC: Document Output Program**PDP-11 Operating System: RSX**

Keywords: • File management • Printing

DOC is generally used with the RUNOFF program. Any English or Romanized Japanese text (and soon KATAKANA), such as scientific, technical or medical papers, reports, letters, tables, memoranda, records, or manuals, can be printed on the desired hard copy in adjusted form. Once the document file is prepared in the computer file, you can add to, delete from, or modify the text very easily with minimum retyping. DECUS number 11-468.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Documentor/F**PDP-11 Operating System: IAS, RSTS, RSX, RT-11**

Keywords: • Documentation tools • Modeling/simulation
• Presentation aids • Publishing

Documentor annotates model listings and aligns equations and definitions in user-specified columns. This program works with any DYNAMO software and is useful for large models or for small ones that are to be published or presented. Its references and indexes aid in model construction.

A version of this product is available for VAX computers.

Price: \$1250 - \$2500

Contact: Jack Pugh
(617) 864-8880

PUGH-ROBERTS ASSOCIATES, INC.

5 Lee Street

Cambridge, MA 02139

DocuSearch Full-Text Retrieval System

PDP-11 Operating System: RSTS

Keywords: • Data base management • Query facilities
• Research

This rapid text-retrieval system stores the full text of any length document. As many as 33,000 documents for each data base can be stored on the PDP-11 series; VAX storage is virtually unlimited. When the data base is built by DocuSearch, a dictionary is automatically created. The dictionary is used to quickly complete searches without the need to process the text of the documents.

DocuSearch accurately performs searches on occurrences of a single word or complex strings, such as "word A and/or word B," root-word inquiries, phrase, and proximity searches. In addition to free-form text, DocuSearch allows fixed-format fields for selection, sorting, and columnar reports.

DocuSearch lists the documents meeting search criteria. The user decides which documents to review. DocuSearch browses smoothly forward and backward through the documents, traveling from one document to another on command. DocuSearch highlights search words as they appear in the document. Selected documents can be reviewed on the CRT screen, then printed.

A version of this product is available for VAX computers.

Price: \$14,500 - \$17,500

Contact: Ralph S. Trigg, Jr.

(505) 842-1247

AUTOMATED OFFICE SYSTEMS, INC.

P.O. Box 100

Albuquerque, NM 87103

ED

PDP-11 Operating System: RT-11

Keywords: • Programming tools

Memory required: 28K.

ED is an easy-to-learn, easy-to-use scrolling video text editor for use with a VT52 or VT100 terminal. The terminal's screen is treated as a "window" through which the user views a 24-line section of a text file. Single-keystroke commands, whose effects are immediately visible, provide standard text editing functions. DECUS number 11-343.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

EDCMD: Command Line Editor and Command Line Recall

PDP-11 Operating System: RSX

Keywords: • Application development • Development tools
• Disk utilities

Memory required: 5.8KW.

EDCMD allows you to edit the current command line and to recall up to 10 previous command lines. In addition, each of the 10 numeric keypad keys can be defined as a separate command that can be recalled and used at any time. EDCMD has been tested under RSX-11M Version 4.1 and probably will run under RSX-11M-PLUS. Command lines are limited to 80 characters. EDCMD is written for either FORTRAN IV or FORTRAN-77 and has been tested with both. The program is simple, and changes can be readily made. DECUS number 11-716.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

EDMACS: A Screen Editor Program

PDP-11 Operating System: RSTS

Keywords: • Documentation tools • Printing

Memory required: 16-24K.

This screen editor is modeled after MIT's EMACS editor and provides cursor movement by character, word, line, sentence, and screen, as well as deletion of characters, words, lines, and blocks of text. Characters, words, lines, and blocks of text can be moved and transposed. Forward and reverse searching, queried string replacement, text centering, case conversion, and indentation assistance are also included. The system also includes on-line help and protection from being caught between CR and LF. Confirmation is requested for operations, such as file saves. Fast run-time responses result from a novel dispatch table approach.

User-written routines can be created during an edit session and "bound" to control sequences. Both user-written and existing commands can be rebound to new keys, permitting EDMACS to look like other editors.

A user's initialization file can contain private commands and load libraries and can set up personal command bindings. The 66-page manual explains how to use EDMACS, describes the commands, and documents EDMACS internals. Included with the EDMACS distribution is a screen-oriented INFO retrieval program, modeled after MIT's INFO program. DECUS number 11-737.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

epsitool

PDP-11 Operating System: RSX

Keywords: • Software utilities • Translators

These powerful text-processing utilities allow knowledgeable programmers to prepare, review, and manipulate program texts, manuals, test data, memos, and the like:

- **epsitool:look** allows the user to look at files. The system can copy lines that do or do not match, show the environment of a matched

line, or underline matches. The user can select a whole file or just a part of it by line number or pattern matches.

- **epsitool:page** paginates a file, adding page numbers, page headers and footers, and line numbers; folds long lines; and prints in multi-column form.
- **epsitool:trim** performs shape transformations, such as character translation, upper-/lowercase conversion, removal of unprintable characters, replacement of multiple blanks by tabulators and vice versa, blank compression, and truncation or folding of long lines.
- **epsitool:cut** cuts files into several files, based on match patterns or line numbers.
- **epsitool:slice** rearranges fields specified either by column number or by field separators in the input records. Output fields are left- or right-adjusted or centered as specified by options. The user can transform free-format data to fixed format (column-oriented) and vice versa, to invert the order of fields and to skip or extract fields.
- **epsitool:translate** converts files from one character code to another. Besides the standard ASCII/EBCDIC tables, user-supplied translation tables can be specified.
- **epsitool:report** reports number of lines and words, maximum line length, unprintable characters, and, optionally, character frequencies.

A version of this product is available for VAX computers.

Price: \$700 – \$1200

Contact: Hartmut Feuerhahn
+ 49-30-8826991

EPSILON

Kurfürstendamm 188

D-1000 Berlin 15 West Germany

FETCH.B: An Editor in MU BASIC

PDP-11 Operating System: RT-11

Keywords: • Development tools • Programming tools

Memory required: 1500 words.

This program, which takes the place of an editor while you are in MU BASIC, can be used on data files, FORTRAN source files, text files, and configuration files. This program writes a second program, which can be edited like a normal basic program; when you run it, your original file is recreated. DECUS number 11-705.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

FILEDT

PDP-11 Operating System: RSTS

Keywords: • Disk utilities

Memory required: 15KW.

FILEDT is a specialized text editor for editing disk files block by block. The data in any given block can be examined in a variety of formats. A user can change any word of any block in a file. This program is most useful for editing object or executable files. DECUS number 11-715.

Price: \$5 - \$225

Contact: DECUS (see Introduction).

FMS-11/RXS

PDP-11 Operating System: RSX

Keywords: • Data entry • Forms management
• Programming tools • Query facilities

This forms-oriented video I/O management system for the RSX-11M, RSX-11M-PLUS, and RSX-11S real-time operating systems functions as an independent software front end that logically off-loads the complexities of interactive video I/O management from the application program. FMS-11/RXS can be used as a general-purpose manager of operator I/O or as a front end in traditional source data entry applications. Possible FMS-11/RXS applications range from data base inquiry/response/update to using periodic displays of the status of a real-time process or accepting control information from the operator for the process.

Call statements and high-level language interfaces are provided for applications written in FORTRAN IV/IAS-RSX, FORTRAN-77/RXS, BASIC-PLUS-2 for RSX-11M and COBOL, as well as MACRO-11 assembly language. FMS-11/RXS is equally effective for implementing applications with question-and-answer, menu, or fill-in-the-blank forms.

Forms defined using FMS-11/RXS can use the following features of DIGITAL's VT100 terminal: reverse video, bold, underlining, and blinking characters; 132-column lines; jump and smooth scrolling; and split and reverse screens.

FMS-11/RXS consists of the following software components:

- **FED (Form Editor)** — Used by the application developer to create and modify video forms by typing them on the screen as they are to appear to the application user.
- **FUT (Form Library Utility)** — A multifunction utility program for manipulating files of FMS-11/RXS form descriptions.
- **FDV (Form Driver)** — A reentrant subroutine called from application programs to control screen processing.
- **KED (Video Keypad Editor)** — A general-purpose text editor that operates on standard ASCII files. KED uses the function keypad to control the full spectrum of video features of the VT100. A VT52 version (K52) is provided.

Refer to SPD #12.27.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1240 - \$3200

Contact: Consult your local DIGITAL sales office (see Introduction).

FMS-11/RT-11**PDP-11 Operating System:** RT-11**Keywords:** • Data entry • Forms management
• Programming tools • Query facilities

This set of utilities and subroutines provides a multiterminal video forms capability for programs written in MACRO-11, BASIC-11, or FORTRAN IV under the RT-11 operating system. Forms defined using FMS-11 can use the following features of DIGITAL's family of VT100-compatible terminals: reverse video, bold, underlined, and blinking characters; 132-column lines; jump and smooth scrolling; and split and reverse screens. The system can be used as a general-purpose manager of operator I/O to programs written in any of the supported languages and also as a front end in traditional source data entry applications.

Each field in an FMS-11/RT-11 form can be assigned attributes such as validation "picture," embedded text characters, right/left justification, fixed decimal, and "must complete." A default value and a line of explanatory help text can be associated with each field of a form. In addition, a separate help display can be associated with each form.

Another feature of FMS-11/RT-11 is "named data," which allows named strings of constant data to be associated with a form at form creation time and retrieved dynamically by name or number during program execution.

FMS-11/RT-11 applications written in MACRO-11 or FORTRAN IV can be built for either single- or multiterminal applications. In multiterminal applications, the terminals can run different tasks and can change tasks independently of one another. The FMS-11/RT-11 software supports the maximum number of terminals allowed under each RT-11 hardware configuration.

FMS-11/RT-11 consists of the following software components:

- **FED (Form Editor)** — Used by the application developer to create and modify video forms by typing them on a VT100 screen as they are to appear to the application user.
- **FRMUTL (Form Utility)** — A multifunction program that manipulates FMS-11/RT-11 forms descriptions and that can be used to list the directory of a form library or to print a complete description of a form from a form library or from a data file.
- **FDV (Form Driver)** — A reentrant subroutine called from application programs to perform screen processing.
- **ARTS (Application Run-Time Supervisor)** — Allows each terminal in a multiterminal system to run a MACRO-11 or FORTRAN IV application program independently of the programs on the other terminals. As an interface between the application programs and the RT-11 monitor, ARTS acts as a multitasking submonitor, providing subroutines for terminal and mass storage I/O and for shared and private file access management.

Refer to SPD #12.22.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1240 – \$3200

Contact: Consult your local DIGITAL sales office (see Introduction).

Forms-Control Simulation for DECwriters and Teletypes

PDP-11 Operating System: RT-11

Keywords: • Modeling/simulation • Printing

Several RT-11 system software programs (for example, MACRO and DUMP) generate listings punctuated by form feed characters. DECwriters and teletypes do not respond to form feeds by spacing the paper to the top of the next page. Therefore, the Form program was written to simulate forms control while copying a listing from a mass-storage device to a DECwriter or a teletype. Form counts printed lines and introduces the correct number of line feeds in place of a form feed. The line count is determined by line feed characters in the text and by extra lines introduced by the DECwriter due to line overflow. DECUS number 11-188.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

Framer

PDP-11 Operating System: RSTS

Keywords: • Computer-aided instruction • Documentation tools
• Presentation aids

Framer is used to format the log files created by Clyde Digital Systems' DOC, WINDOW, and CONTRL programs into screen-sized frames that can easily be played back for on-line training documentation. Each frame shows the trainee exactly what should appear on the screen at any point in a job session. Framer is also used to format log files documenting screen-oriented programs, such as FMS-type programs.

A version of this product is available for VAX computers.

Price: \$400

Contact: Carolyn Clyde
(801) 224-5306

CLYDE DIGITAL SYSTEMS, INC.

P.O. Box 4500

Provo, UT 84603-4500

GAMKED and CURKED: Programs for Editing GAMMA-11 and CURVE Macros

PDP-11 Operating System: RT-11

Keywords: • Disk utilities • Programming tools

Memory required: 7000KW.

GAMKED makes it possible to edit GAMMA-11 macros with RT-11 editors — KED, EDIT, TECO, or VTECO — using programs that first transform the macro to a temporary RT-11 ASCII file, which is edited

normally, and that then transform the RT-11 file back to GAMMA-11 macro form. That process is made automatic by an indirect command file, which can be started from GAMMA or RT-11. For further documentation, see file GAMKED.DOC.

CURKED is a similar editing system for the macros used by the curve-manipulating program CURVE.

Included with this package are the editors VTECO and STECO (TECO versions for VSV-01 and VT-01 displays). Also included is the CURVE package. DECUS number 11-586.

Note: The sources for VTECO.SAV, STECO.SAV, CURVE.SAV, and CVHELP.SAV are not included.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

HC.MAC — A Handler that Converts a Second Terminal into a Line Printer

PDP-11 Operating System: RT-11

Keywords: • Device drivers/handlers • Modeling/simulation
• Printing

This handler makes a hard-copy nonconsole terminal simulate a line printer. Tab and form feed characters are serviced (latter optional). Width and length of page are settable, as well as lowercase. The handler can also be set to leave eight blank lines around the crease between pages. Unlike a real line printer, the terminal must be initially positioned to the top of the page in order to continue to conform to page boundaries. The program can put out filler characters for high baud rate terminals. DECUS number 11-391.

Note: HC.MAC uses handler macros in RT-11 V03.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

HCR/EDIT

PDP-11 Operating System: UNITY

Keywords: • Programming tools

With the screen editor HCR/EDIT, you use five standard keys to move in a document; your fingers do not leave home row. You always see an exact image of your file on the screen. If the system crashes while you are working, the crash-recovery mode makes a copy of your working file.

HCR/EDIT is a screen editor, but you can also use the standard UNIX* line editor through a window at the bottom of the screen. HCR/EDIT is designed for terminals with cursor addressing and high baud rates that can display all printing ASCII characters and scroll up at the bottom screen line. HCR/EDIT is also available for VAX UNIX* 4.1 BSD and can be adapted to other UNIX* configurations for OEMs.

A version of this product is available for VAX computers.

Price: \$750 +

Contact: Sales Department
(714) 493-8664

HUMAN COMPUTING RESOURCES CORP.

10 St. Mary Street

Toronto, Ontario M4Y 1P9 Canada

IGOR Document Preparation System

PDP-11 Operating System: RSX, RT-11, ULTRIX-11

Keywords: • Documentation tools • Graphics • Office systems
• Word processing

This easy-to-use document preparation system is intended for writers of large, structured documents, such as reports, specifications, proposals, and so forth, and is being used to produce documents for the United Kingdom Ministry of Defense Standards. IGOR supports line graphics, arithmetic functions, tables of contents, chapter and section numbering, flexible page headings and footers, and double-sided output.

Using high-level commands such as "start chapter," the operator specifies the logical structure of a document. IGOR then uses a predefined document profile to produce a result that adheres to the layout standard for that document type. Profiles for various documentation types are supplied with IGOR, and the user can augment those with any number of house styles. Revisions are easily made, since changes are automatically inserted in the correct format.

A version of this product is available for VAX computers.

Price: £500 - £5000

Contact: John Wilkie
(0483) 69933

NOVUS SYSTEMS TECHNOLOGY LTD.

Weymead House, Millbrook

Guildford, Surrey England

INFOTEX

PDP-11 Operating System: RSTS

Keywords: • Office systems • Presentation aids • Publishing

This in-house videotex system allows you to publish, store, and locate hundreds of documents, product descriptions, sales bulletins, and so on. INFOTEX provides up-to-date information, simple maintenance procedures, and a menu-driven user interface.

A version of this product is available for VAX computers.

Price: \$2400

Contact: Thomas Considine
(617) 484-6814

CONSIDINE DIGITAL SYSTEMS

490 Trapelo Road

Belmont, MA 02178

IS-LEM Word Processing System

PDP-11 Operating System: MicroPower/Pascal, RSX

Keywords: • Mathematics • Presentation aids • Scientific
• Word processing

This interactive word processing and formatting system, written in Pascal, offers totally new possibilities for the processing of scientific symbols and mathematical formulas with different character sets (Greek, roman, mathematical, special, half). The user executes a powerful set of instructions through function keys. That makes the system easy to use, even for casual or untrained operators, and leads to high productivity.

Apart from its scientific capacities, IS-LEM also permits the definition and retention of paragraph formats; variable line spacing in one-half steps, as on a typewriter; easy input, duplication, modification, omission, and search of text; the learning and repeated execution of complex command sequences; and interactive hyphenation, word division, and pagination, with processing of footnotes, figures, and formulas.

With IS-LEM, the image on display corresponds exactly to what will appear on paper. For that purpose, a suitable character set is available that can be printed in normal, bold, and cursive and that, on request, can be adapted to specific needs (for example, chemical formulas, Arabic text, or the user's specific symbols).

A version of this product is available for VAX computers.

Price: \$2400 - \$3000

Contact: Paul Styfhals, Managing Director
(32) 02 251 60 36 or Telex: 25520

INFOSYSTEMS S.A.

J.B. Nowelei 47 Bus 6

1800 Vilvoorde Belgium

Lawrence RUNOFF

PDP-11 Operating System: CTS-300, RSTS, RT-11

Keywords: • Documentation tools • Presentation aids
• Printing

This flexible text and document formatting program provides high speed (65 pages/min) and low overhead (7-9KW under RSTS/E). Distinctive features include:

- Centered or left/right alternation of page numbering
- Flexible positioning of title and subtitle on each page
- Automatic computation of footnote size
- Positioning of footnotes either page by page or as a list of references
- Indexing (phrases stored uniquely)
- Hyphenation as a run-time option
- Programmed justification through microspacing with Diablo-type terminals

Coupled with high speed, the capacity for printing only a limited range of pages specified at run time facilitates the preparation of long documents.

A software kit supplied with the program permits local tailoring of Lawrence RUNOFF for specialized output devices. Lawrence RUNOFF is fully documented for both the user and the system manager.

Price: \$200 - \$500

Contact: Dr. James S. Evans, Director of Computer Services
(414) 735-6571

COMPUTER CENTER PUBLICATIONS

Lawrence University, Box 599

Appleton, WI 54912

LCP01 Software

PDP-11 Operating System: RSX

Keywords: • Down-line loading • File transfer • Printing

The LCP01 software, a down-line loadable file used with the LCP01 Color Printing System, is loaded into the LCP01, using any standard RS-232, 20ma, or RS-422 serial port supporting XON/XOFF protocol. Once the software is loaded into the LCP01, the LCP01 can process ASCII text, ReGIS (Remote Graphics Instruction Set), GIDIS (General Image Display Instruction Set), NAPLPS (North American Presentation Level Protocol Syntax), and color sixel. All valid commands in those protocols, as defined in the *LCP01 User's Guide*, are accepted. Only those commands applicable to a hard-copy noninteractive device are acted on. Files can be transferred to the LCP01, using the standard system PRINT utility and the system print queues.

This software is included with the LCP01 Printing System and cannot be ordered separately.

Refer to SPD #30.46.xx when requesting further information on this product from your local DIGITAL sales office.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: Consult your local DIGITAL sales office (see Introduction).

LISTER: Listing Utility Program

PDP-11 Operating System: RT-11

Keywords: • File management • Printing • Software utilities

Memory required: 1K.

LISTER is designed to format ASCII files for proper paging on a device that does not support hardware form feeds. Page size and the number of printed lines for each page may be specified. DECUS number 11-243.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

LISTRSX: RSX-11D Multicolumn Listing Utility

PDP-11 Operating System: IAS, RSX

Keywords: • Data entry • Printing • Software utilities

LISTRSX reformats ASCII text into up to 10 columns from any ASCII file structured as lines of text. The program may be installed in an RSX system and used to save paper and time in listings.

The program can specify how many columns are desired for each page, page length and width, whether to truncate lines too long for the columns or to have them wrap around within the column, whether to ignore form feeds on input or to interpret them, whether or not to compress tabs into single spaces, and whether or not to pause between pages. The pause option is convenient for examining long files on CRT terminals a page at a time. DECUS number 11-266.

Restrictions: LISTRSX does not interpret FORTRAN carriage controls — they must be removed by TECO.

Note: A minor edit is needed for RSX-11D Version 4.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

LST: A Paging Utility for Non-Form-Feed Devices

PDP-11 Operating System: RSTS

Keywords: • Printing

Memory required: 14KW.

This system utility for printing out text files in a paged format on non-form-feed devices also works on form-feed devices. The only format command that needs to be added to the actual input files is ".PAGE" where a new page is desired. Multiple input files are allowed, as many as will fit on a command line. Special option commands are available to suppress page numbering, set special form lengths, print a title, denote a cover page, pause between page output, and print the number of standard words (five letters a word) in a file.

The program does not modify the file itself, that is, filling, justification, footnoting, and so on. DECUS number 11-560.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Micro/RSX DEType

PDP-11 Operating System: Micro/RSX

Keywords: • Printing • Word processing

Micro/RSX DEType is a DECmate-style word processor providing many of the features of the DECmate and WPS-8. Experienced WPS or DECmate users can begin using Micro/RSX DEType immediately. Micro/RSX DEType supports the WPS keyboard so that Micro/RSX DEType users can execute most of the editing functions. Micro/RSX DEType documentation is organized and formatted to resemble WPS documentation.

Micro/RSX DEtype permits concurrent word and data processing in a multiuser environment, which extends a data-processing system with word-processing capabilities. The Micro/RSX DEtype editor creates and maintains documents stored on the full range of disk devices supported by Micro/RSX/VMS. Storage available for documents will vary, depending on other data-storage requirements on the same disk medium.

Refer to SPD #18.14.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$595

Contact: Consult your local DIGITAL sales office (see Introduction).

MSPOOL

PDP-11 Operating System: RSTS

Keywords: • Printing • Process control

This printer spooling package is designed for installations with multiple low-speed printers. MSPOOL handles up to 127 printers, printing on any four simultaneously, thus saving job slots. This 6KW program, written in MACRO, uses much fewer system resources than SPOOL or PBS. MQUE is a 4KW macro program used to interface the user with MSPOOL. Print options include flag pages, multiple copies (up to 255), and delayed printing.

Price: \$495

Contact: John Wolnisty
(07) 275-2255

MORGAN EQUIPMENT (AUST.) PTY. LTD.

P.O. Box 213

Archerfield, QLD 4109 Australia

NRL "English Text to VOTRAX Parameters" Algorithm

PDP-11 Operating System: RT-11

Keywords: • Signal processing

Memory required: 16K or more.

This algorithm uses the RT-11 SYSLIB string manipulation routines to efficiently implement the U.S. Naval Research Labs' "English-to-VOTRAX" algorithm. Computers can "speak" by computing parameters that are output to speech synthesizers. The VOTRAX synthesizer has found widespread applications and is available as a "professional" model (from its manufacturer, Federal Screw of Troy, MI 48084) and in a "hobbyist" version (from the Digital Group, P.O. Box 6528, Denver, CO 80206). Either model can be driven from a log-rate parallel interface with a "phoneme" string derived from the text to be spoken.

The software runs in real time (or less) on any PDP-11, including the LSI-11. A parallel interface — for example, DR-11C — is required. The software will run on a 16K system under RT-11 V02C. DECUS number 11-375.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

OS/ED (Screen Editors)

PDP-11 Operating System: ULTRIX-11

Keywords: • Source code control

One version of OS/ED is an easy-to-use, easy-to-learn module that permits a programmer to change (edit) sources, documents, data, and program files. The enhanced version is a full word processing-style editor for use in changing sources, documents, data, and program files. That version includes a powerful command set (approximately 70 commands).

OS/ED's primary function is to provide a complete set of text editing capabilities for OS/RT, Destek's real-time, multitasking operating system kernel. OS/ED can be used in any industrial or business application that requires a range of screen/text editing features and can be purchased in either binary or C source code versions.

A version of this product is available for VAX computers.

Price: \$250

Contact: Dennis Rieger
(408) 737-7211

THE DESTEK GROUP
830 East Evelyn Avenue
Sunnyvale, CA 94086

PC-Forms

PDP-11 Operating System: RSX

Keywords: • Forms management

This software package, used with a standard text CRT editor, can implement a formatted CRT screen management tool to enhance the user's acceptance of the computer system. Thus, responsibility for validating input is placed on the computer system rather than on the user. PC-Forms also provides ease of use for the application programmer, since the subroutines are written in FORTRAN and can be implemented on nearly any system, with very little change to the addressing scheme.

Price: \$3000

Contact: David L. Schroeder, Ph.D., President
(412) 776-3130

PROCESS CORP.
163 Thorn Hill Road
Warrendale, PA 15086

PROOF: A Proofreading Program/Spelling Checker

PDP-11 Operating System: RT-11, TSX-PLUS™

Keywords: • Documentation tools • Office systems
• Report writer • Word processing

This optimized general-purpose program is compatible with all word processors and text file formats. The program runs on an LSI-11/03 or a PDT under DIGITAL's RT-11 and S&H's TSX with a minimum of 28K words of memory and has been optimized for speed. The PROOF program runs on a system configured with a minimum of two single-density floppy drives. Of course, the program is compatible with improved hardware, such as an LSI-11/23 and Winchester disk drives.

PROOF checks the words in a subject document against a reference dictionary and a personal dictionary. Words that are not found are presented to the user for review. The presentation is made in alphabetical order, which facilitates the use of a hard-copy dictionary for reference. Corrections are made directly in the subject document, and words that are correct may be added to the personal dictionary.

The proofreading program distribution contains a compressed 50,000-word dictionary. The program has been optimized to read the dictionaries at a rate of more than 60,000 words a minute, using an LSI-11/03 and floppy disk drives. Substantially faster rates are achieved with an LSI-11/23.

PROOF is of the highest quality, and customer satisfaction is guaranteed. The purchase of a license includes the cost of all future versions, with the exception of nominal media and handling charges. Profiteer Company's marketing strategy is to offer professional software at hobby prices.

TSX-PLUS™ is a trademark of S & H Computer Systems, Inc.

Price: \$175

Contact: Thomas A. Rorro
(703) 560-4784

PROFITEER CO.
7855 Colonial Village Row
Annandale, VA 22003

PROSE-PLUS

PRO Operating System: P/OS

Keywords: • File transfer • Graphics • Word processing

This compound document processing software application for the Professional workstation provides a similar human interface to both the text processing and the graphics processing functions in that both editors use the same four function keys for all command options. The product allows the user to merge both text and graphics into a single document that can be displayed on the monitor or printed on an LA50 or an LA100 printer.

PROSE-PLUS supports immediate display of the effects of all editing functions, such as bold, underline, and right-margin justification, as well as the ability to display the combined text and graphics document prior to printing. The desired graphic appears as a box on the screen while the user is editing the file to show how much space the graphic

will take up in the final document. After the file has been finished, the user can first view it on the monitor; a print command will then produce a hard copy of what was displayed on the screen.

P/OS hard disk is prerequisite.

Refer to SPD #40.13.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$295

Contact: Consult your local DIGITAL sales office (see Introduction).

Q'TEXT

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • Data dictionary • Documentation tools
• File management • Word processing

Q'TEXT works with ASCII files and has a full-screen editor with fully reassignable keyboard, centering, left and right flush, on-line help, justification, and search and replace. Program features give users immediate access to any part of a file, entry-time formatting, column manipulation, interactive solid-line drawing, exceptional printer control, sorting, record processing, complete file maintenance facilities, and an integrated arithmetic module. Q'TEXT supports special symbols both on the screen and on the printer, the setting of scientific and mathematical equations, proportionally spaced output, and the type-setting of text. Q'TEXT comes with an integrated spelling monitor, which reports spelling errors as they occur. When an error is indicated, the typist may correct it, disregard the warning, or augment the dictionary. A comprehensive personalized vocabulary can also be quickly built from existing documents.

A version of this product is available for VAX computers.

Price: \$875 - \$6125

Contact: Lawrence Northway
(613) 727-1120

DAYLANN MARKETING, INC.

106 Colonnade Road, Suite 120

Nepean, Ontario K2E 7P4 Canada

RSTS/E INDENT

PDP-11 Operating System: RSTS

Keywords: • Compilers • Data entry • Forms management

This data entry and forms management product for commercial applications programs written in DIBOL, COBOL, or BASIC-PLUS-2 runs under the RSTS/E operating system. RSTS/E INDENT supports DIGITAL's VT52, VT100, and VT200 terminals and uses the following VT100 features: reverse video, bold, underline, blink, 132-column lines, scroll, split screen, reverse screen, and the line-drawing character set.

RSTS/E INDENT is designed to make optimum use of system resources. Application programs communicate with executing forms tasks through the RSTS/E message SEND/RECEIVE directives. Forms are controlled through standard subroutine calls that support both single- and multiterminal applications. INDENT supports both synchronous and asynchronous commands. The asynchronous commands enable host programs to continue executing application code after executing an INDENT command.

RSTS/E INDENT is highly compatible with VAX INDENT, which provides a migration path for users to move their applications that use INDENT from RSTS/E to VMS, with little impact to their existing investment in INDENT. VAX INDENT can be called from any language on VMS that uses the VAX-11 Procedure Calling Standard, including BASIC-PLUS-2, COBOL, and DIBOL, supported by RSTS/E INDENT.

The user-oriented INDENT form definition language is easy to learn. Form definitions support COBOL data types, including leading-separate-sign, overpunch, and packed-decimal, as well as alphabetic, alphanumeric, and numeric data types for DIBOL, BASIC-PLUS-2, and COBOL.

The extensive forms attribute set includes SKIP, PROTECT, BOX, HALT, CUE, DUPLICATE, REQUIRED, SCROLL, PAINT, INITIAL, PICTURE, DATE, TIME, ERASE, and REVERSE. Form definitions can include table-lookup and range-checking attributes, including LOOKUP, SUBSTITUTE, LOWER, and UPPER.

Refer to SPD #12.33.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$1200

Contact: Consult your local DIGITAL sales office (see Introduction).

RSX-11 TECO with Buffered Typeout, VT52 Window Support, and Doctor Game

PDP-11 Operating System: RSX

Keywords: • Games • Presentation aids

You can use this version of TECO with a VT52 terminal as a scope editor, displaying a "window" around your position in the text. A macro allows TECO to do that. A document file describing the resulting special features of scope operation is provided.

Doctor (The Computerized Analyst) is a version of the old Eliza program written to run in TECO. Doctor is less powerful than the original LISP program but requires only a version of TECO to run. The program causes the computer to respond as a psychoanalyst to your questions and attempts to carry out a conversation with you.

Doctor runs with any version of TECO. DECUS number 11-360.

Note: Scope MACRO for TECO requires the version of TECO submitted. The scope MACRO must be changed slightly for non-VT52 terminals.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RSX-11M-PLUS DECType

PDP-11 Operating System: RSX

Keywords: • Printing • Word processing

This DECmate-style word processor provides many of the features of the DECmate and WPS-8. Experienced WPS or DECmate users can begin using RSX-11M-PLUS DECType immediately. RSX-11M-PLUS DECType supports the WPS keyboard so that RSX-11M-PLUS DECType users can execute most of the editing functions. RSX-11M-PLUS DECType documentation is organized and formatted to resemble WPS documentation.

RSX-11M-PLUS DECType permits concurrent word and data processing in a multiuser environment, which extends a data processing system with word processing capabilities. The RSX-11M-PLUS DECType editor creates and maintains documents stored on the full range of disk devices supported by RSX-11M-PLUS/VMS. Storage available for documents will vary, depending on other data-storage requirements on the same disk medium.

Refer to SPD #14.82.xx when requesting further information on this product from your local DIGITAL sales office.

Price: \$900

Contact: Consult your local DIGITAL sales office (see Introduction).

RUNOFF, Bonner Lab

PDP-11 Operating System: IAS, RSX, RT-11

Keywords: • Documentation tools • Printing
• Word processing

Memory required: 32KB.

When used with an editor, this text processor makes a complete word processor. Its syntax is almost identical to DSR (DIGITAL Standard Runoff) and is compatible with previous versions of RUNOFF. This program supports scientific word processing to produce publication-quality output and has been used to produce theses, progress reports, and scientific papers.

This version allows complete control of any printer available through user-definable escape sequences. In addition, a macro facility allows text or sequences of commands to be abbreviated to a single label. If the printer has the correct features, variable spacing, subscripting, superscripting, and equation formatting are possible. By properly defining escape sequences, the user can support different printers in a transparent fashion. In other words, the same input text will print in identical

fashion on different printers with different control codes and escape sequences.

Table of contents, indexing, and subindexing are supported. LAYOUT and STYLE commands can completely change the look of the pages. Table layout is simplified by right-justified and "decimal"-justified tabs. Permanent margins that apply to the page headers are available, simplifying the setting of header and text margins.

RNO occupies a minimum of 31 to 37K bytes, depending on the operating system. DECUS number 11-703.

A version of this product is available for VAX computers.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RUNOFF for RSX-11 and RSTS/E

PDP-11 Operating System: IAS, RSTS, RSX

Keywords: • Documentation tools • Printing

Memory required: 10KW to 14KW.

RUNOFF greatly aids in the preparation of documents and manuals. The program provides automatic line fill and right-margin justification, hyphenation, section labeling, pagination, positioning of tables and figures, and creation of tables of contents and an index.

This program is an updated and enhanced version of an earlier DECUS library version but is not derived from DECUS number 11-530. This version does not run under RT-11, nor does it support the "transparent string" feature of that version.

This program can combine multiple input files, produce up to three tables of contents — Contents, Figures, and Tables — record subentries in the index, and provide a self-expanding index buffer as required. DECUS number 11-683.

Note: Many bugs have been fixed, and several existing features have been enhanced. The user manual has been extensively updated, including descriptions of all the new features.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RUNOFF: M02.4-14

PDP-11 Operating System: IAS, RSTS, RSX, RT-11

Keywords: • Documentation tools • Printing

Memory required: 8KW to 10KW.

This enhancement to the RUNOFF document-processing program includes raw text string handling for printers and displays, macros, a rewritten footnote processor, improved underscoring, a binding margin, support for table generation, change bars, and titling improvements. DECUS number 11-530.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RUNOFF M02.4H for the Professional 300

PRO Operating System: RT-11

Keywords: • Documentation tools • Printing
• Word processing

Document preparation is greatly aided by RUNOFF. Automatic line fill, right-margin justification, hyphenation, pagination, index creation, and decimal notation sectioning are among the facilities provided. This program is an updated and enhanced version of RUNOFF (DECUS No. 11-530). This release supports the RT operating system with a common baseline.

This version of RUNOFF has a modified hyphenation algorithm, conforming to the UNIX* Version 7 table and diagram threshold values. This version also has support for transparent printer control strings that are passed directly to the output without affecting the fill and justify processing. This facility makes it possible to use special features found on many letter-quality printers, as well as implementation of specialized preprocessor programs that can provide mathematical typesetting, graphics, and so on. DECUS number PRO-104.

* UNIX is a trademark of AT&T Bell Laboratories.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

RUNREF

PDP-11 Operating System: ULTRIX-11

Keywords: • Data base management • Medical • Publishing
• Scientific

RUNREF, a reference formatting and retrieval program for scientific manuscripts, retrieves citations from a data base, inserts appropriate numbers in text, and produces bibliographies in the punctuation style appropriate for a variety of medical and scientific journals. The programs are written in C.

Citation material is placed in a data base format that allows retrieval by keyword, phrase, author, year, and so on. Citations are given identifying numbers, which may be used in the production of text. The text-formatting program uses the text and data base to then format the text and bibliography. The text will include, for example, superscripted numbers in citation or alphabetical order, according to the bibliographic style required by the publisher or granting agency. Authors' names and year of publication may appear within the text, if desired. Alphabetic or numeric-order listings of the cited bibliographic material are produced in the "references" section in any one of 27 available punctuation styles. Error checking for incorrect input and a 25-page user's guide are available.

The lower price includes documentation for a single user. The higher price is for an annual licensing fee for a multiuser system with automatic updates.

A version of this product is available for VAX computers.

Price: \$200 – \$500

Contact: B. Todd Troost, M.D.
(216) 444-3190

DAYSTROM SYSTEMS, INC.
11206 Euclid Avenue, Suite 308
Cleveland, OH 44106

R/W (Report Writer), MCBA, Inc.

PDP-11 Operating System: CTS-300, RSTS, RT-11

Keywords: • Report writer

This powerful and flexible executive tool offers state-of-the-art capabilities in report selection and mathematical functions in a report. Even a user with little or no previous computer experience can quickly and easily construct, format, and print a wide variety of useful and attractive reports.

The program accesses up to six data files for any report, allows the user to resequence data description files and report control files, and displays any report. R/W allows arithmetic, including complex calculations, on fields; allows cross-referencing of up to five secondary files by up to three fields each; generates no source code, since it is table driven and parameter driven; permits fast turnaround time from concept to report; supports all MCBA and non-MCBA files; opens data files in input mode so that data integrity is not threatened; provides comprehensive screen prompting for nontechnical users; handles many terminal types and allows the user to specify compiler, operating system, and sort, including RTSORT; supports true multiple keyed access to any physical file; easily defines report order by up to three fields (sorts are transparent to the user thereafter); accommodates multirecord types in the same physical file; allows multilevel control breaks up to three levels deep; allows the user to access data files residing on any device; sorts mm/dd/yy dates in their true date sequence; provides automatic wraparound if print lines exceed specified page width; provides powerful exception selection when running a report; and supports up to three printers.

Price: \$1500 – \$2000

Contact: Sales Representative
(818) 957-2900

MCBA, INC.
2441 Honolulu Avenue
Montrose, CA 91020

SATURN-WP™ Word Processing/List Processing

PDP-11 Operating System: Micro/RXS, RSTS, RSX, RT-11

PRO Operating System: P/OS, TSX-11

Keywords: • List processing • Presentation aids
• Word processing

Memory required: 48K bytes.

SATURN-WP provides word and list processing, data entry, sort/select, spelling check, and utilities. The system's full-screen editing capacity means that you see the whole context as you edit. The extensive spelling dictionary supplied can be easily expanded to include words, names, or phrases unique to each user. Automatic creation of indexes and tables of contents, headers, footers, footnotes, and outline formats facilitate report generation. The data entry portion of SATURN-WP gives you 32,000 records. The multiple levels of sorting, selecting, and excluding allow you to arrange and rearrange the data in your files in unlimited ways.

SATURN's unique "ruler" gives you control of margins, tab settings, negative and positive indenting, centering, columns, justification, spacing, and many other options, which you can change at will. Individual log-on defaults give each user in a multiuser system unique formatting defaults and printer options.

SATURN-WP interfaces with other segments of SATURN's integrated line of software to give you a total system. Load information from data entry fields into a SATURN-CALC™ spreadsheet for analysis, then bring the information back into SATURN-WP as part of a report or letter.

A version of this product is available for VAX computers.

Price: \$1000 - \$5000

Contact: Michael Raimondi, Marketing Manager
(612) 944-2452; (800) 328-6145; Tlx 290322 Saturn Edna
SATURN SYSTEMS, INC.
6875 Washington Avenue S., Suite 218
Minneapolis, MN 55435

SELECT

PDP-11 Operating System: RSTS

Keywords: • Programming tools

Memory required: 7KW.

This program allows you to specify a wildcard file specification to edit and then repeatedly invokes EDT (Version 2 or 3) to do the editing chores. This program does not need privileges and should not be privileged. Although editing of other users' files is not allowed by RSTS/E, cross-account directories can be obtained. DECUS number 11-706.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

SPELL-11**PDP-11 Operating System:** RT-11**Keywords:** • Data dictionary • File management
• Word processing

Memory required: 28K words.

This simple menu-driven, easy-to-use program checks for spelling errors in standard ASCII text. To run SPELL-11, your CPU must support the Extended Instruction Set (EIS), and you must be running RT-11 Version 3.0B or later SJ or FB monitor.

SPELL-11 contains WEBSTR.DCT (the dictionary), SPELL.V10 (for VT100 terminals), SPELL.V52 (for VT52 terminals), and SPELL.RST (for all other terminals). A larger dictionary is available for those who have larger disks.

SPELL-11 allows you to extract unique words and check spelling and mark errors, extract unique words and compare with the dictionary, extract unique words only, compare unique words with the dictionary only, identify occurrences of misspelled words in source text, change and expand dictionaries, and display statistics.

Within your source text, SPELL-11 will detect only words that contain lowercase characters (first letter may be capitalized), 20 or fewer characters, or only alphabetic characters. Numbers and punctuation characters are ignored except apostrophes when the word is a contraction.

Only the first 1500 words unique to your source text are identified, and only the first 500 unique misspelled words are detected. No more than 132 characters on a given line of your source text are allowed.

Price: \$100 - \$300**Contact:** Edward Judge
(413) 584-7159

FAIRBROTHER ASSOCIATES

P.O. Box 685

Northampton, MA 01061

SPELL for RSX-11M**PDP-11 Operating System:** RSX**Keywords:** • Data dictionary • Software utilities

Memory required: 39KW partition.

SPELL checks spelling errors in text run in the RSX-11M operating system. The three programs in the system are written in FORTRAN-77, except for certain access routines (random-access block I/O to the dictionary) and alphabetic manipulation routines that are written in MACRO.

The program has been optimized for speed. In noninteractive mode, a file will be produced that contains all the words from the document that SPELL could not find in its dictionary. In interactive mode, words can

be replaced, added to the dictionary, or ignored. The dictionary has 40,000 words. DECUS number 11-679.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Spelling Checker with Dictionary Maintenance Utility

PDP-11 Operating System: RSX

Keywords: • Data dictionary • Software utilities

Memory required: 31KW.

This general-purpose spelling checker program allows words in the text file to be compared to words in the resident dictionary file. Failure to find a match in the dictionary generates an operator prompt to verify the word in question. Correctly spelled words are saved and merged into the dictionary file when the entire list has been examined. Misspelled words are saved in file ERRLST.DAT. Abbreviations or other character strings can be skipped or inserted in the dictionary at the user's discretion.

ED3 is a dictionary maintenance program that allows direct access to the dictionary. The operator can read, add, or delete any word in the dictionary. The programs are supplied with a dictionary containing about 4000 words. DECUS number 11-745.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

TECO-11 (Text Editor and Corrector) for RSTS/E

PDP-11 Operating System: RSTS

Keywords: • Documentation tools • Programming tools

Memory required: 4K shared by multiple users.

This fast, versatile, character-oriented text editor can handle any text files, including BASIC-PLUS programs. Nested iteration loops, conditional execution blocks, and macro commands augment the many simpler editing commands for character-string searches, replacements, insertions, and deletions. TECO-11 honors the restrictions of protection codes and nonprivileged user status when it accesses files under RSTS/E.

The TECO-11 system is implemented under RSTS/E as an alternate run-time system, consisting of 4K words of read-only, reentrant code that can be shared by any number of users, who gain access through a brief BASIC-PLUS utility program. The distribution medium contains object code for the TECO-11 run-time systems for RSTS/E V6A-02 and V6B-02, source code for the corresponding BASIC-PLUS utility programs for initiating TECO-11, and formatted text files for a beginner's manual (25 pages), a reference manual (86 pages), and a manager's guide (11 pages). DECUS number 11-238.

Restrictions: Complete TECO-11 source files are not available from the DECUS Library. Systems with only 16K user area under RSTS/E, V2A-02.

Note: The *TECO-11 User Manual* (DECUS number 11-450) must be ordered separately. The writeup included with this program contains loading instructions only.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

TECO Full-Screen Editor

PDP-11 Operating System: RSX, RT-11

Keywords: • Documentation tools • Programming tools

This package consists of two TECO macros providing a full-screen editor with a clean user interface, while retaining the full power and generality of TECO. One of the macros requires a VT100-compatible terminal; the second, a Heath H19 or a Zenith Z19 terminal. The macros are well commented and have been fully tested under RT-11SJ Version 4 with TECO-11 Version 36, RSX-11M Version 4.0 with TECO-11 Version 35, and TSX-PLUS Version 3.1 with TECO-11 Version 36.

TECO should also run with most RT-11 and RSX releases and with other operating systems that support TECO-11. The package requires TECO-11 Version 35 or later. TECO is supplied in RT-11 format, but instructions for converting it to RSX format by way of FILEX are included. DECUS number 11-641.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

TECO V28 for RT-11

PDP-11 Operating System: RT-11

Keywords: • Documentation tools • Programming tools

This powerful text editor runs under most PDP-11 operating systems and is suitable for editing programs, manuscripts, and correspondence. TECO is a character-oriented editor and thus is free from many of the inconveniences associated with many line-oriented editors. In addition, TECO has most of the facilities found in programming languages, such as arithmetic, loops, conditional execution, GOTOs, and so on, allowing the user to write editing programs that alphabetize lists, reformat tables, renumber statement labels, and much more.

This new version of TECO includes many additional features, such as upper-/lowercase support, CRT-style rubouts, wildcard file lookups, bounded searches, and keypad/scope editor option for the VT52. DECUS number 11-288.

Restrictions: TECO V28 will not work on a VT100 in VT52 mode.

Note: The *TECO-11 User Manual* (DECUS number 11-450) must be ordered separately. The writeup included with this program contains

loading instructions only. Complete TECO-11 source files are not available from the DECUS Library.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

TECO V36

PRO Operating System: RT-11

Keywords: • Documentation tools • Programming tools

This powerful text editor, which runs under most RT-11 operating systems, is suitable for editing programs, manuscripts, and correspondence. TECO is a character-oriented editor and thus is free from many of the inconveniences associated with many on-line editors. In addition, TECO has most of the facilities found in a programming language, such as arithmetic loops, conditional execution, and GOTOs, allowing the user to write editing programs to alphabetize lists, reformat tables, renumber statement labels, and more.

This version of TECO includes support for PRO-300 terminals, which do not respond to the usual tests for VT100-type terminals in ANSI mode. The program will therefore run under RT-11 Version 5.1 or later. DECUS number PRO-111.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

TECO V36 for RSX-11D, RSX-11M, RSX-11M+, and IAS

PDP-11 Operating System: IAS, RSX

Keywords: • Documentation tools • Programming tools

Memory required: 12K words.

TECO is suitable for editing almost any form of text file, including programs, manuscripts, and correspondence. TECO is a character-oriented editor and thus is free from many of the inconveniences associated with many line-oriented editors. In addition, TECO has most of the facilities found in programming languages, such as arithmetic, variables for both numerical and text storage, loops, conditional execution, GOTOs, and so on, allowing the user to write editing programs that alphabetize lists, reformat tables, renumber statement labels, and much more.

This new version of TECO includes many additional features, such as IF-THEN-ELSE conditional forms, computed GOTOs, screen support for the VT100, and support for the RSX-11M terminal driver. This version also has the capability for user-provided screen support for other terminals.

- TECO Version 36 for RT and RSTS is not available through DECUS. See DECUS numbers 11-288 and 11-350 for DECUS distribution.
- Important: The tape contains all the documentation files. The DECtapes and diskettes do not contain the manual file. To obtain the manual, see DECUS number 11-450.

DECUS number 11-333.

Note: TECO V36 contains I/O module sources only. Editor sources are propriety.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

TED (The NDSU Terminal Editor)

PDP-11 Operating System: ULTRIX-11

Keywords: • File management • File transfer
• Systems communications

The TED editor is a 2-dimensional screen-oriented editor for UNIX* systems using ANSI 3.64 (VT100) terminals. Full cursor positioning, cut-and-paste operations, and multiple file editing are supported. Operation is similar to the Rand NED editor. TED optimizes communication between the host and the user terminal, resulting in about one-third the communication overhead of NED. Files are edited in memory, eliminating the disk overhead of NED; however, file size is also limited to about 40K bytes. Source code, written in C, is included in the distribution. Several small utilities are also included. This editor can be ported to systems other than UNIX*, with little modification.

A version of this product is available for VAX computers.

Price: \$100

Contact: Daniel D. Kary
(701) 237-8171

NORTH DAKOTA STATE UNIVERSITY
300 Minard Hall
Fargo, ND 58105

TEXT System for Technical Manuscript Preparation

PDP-11 Operating System: RSX, RT-11

Keywords: • Pre- and postprocessors • Printing

Memory required: 16.5K bytes.

Combining TEXT System with DECUS RUNOFF (rno) forms a comprehensive text processing system for technical manuscript preparation of PDP-11 and VAX-11 computers with NEC Spinwriters and the Technical Math/Times Roman type thimble.

All sources and full documentation on each component are provided. DECUS number 11-603.

Note: DECUS RUNOFF is necessary to use this package. The version is M02.4, DECUS number 11-530.

A version of this product is available for VAX computers.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

TIP (Terminal Interface Program)

PDP-11 Operating System: RSX

Keywords: • Menu handlers • Query facilities

This multiterminal menu-driven package allows multiple users to easily execute any function or task by choosing a menu selection. TIP menus are created by using any standard editor (for example, TECO, FDI, KED, EDT). Menus may be altered or expanded while TIP is running. Each menu can have a maximum of 40 selections. Each selector can call in another menu. That nesting can go three levels deep for a maximum of approximately 2.6 million menu selections.

Price: \$3000

Contact: David L. Schroeder, Ph.D., President
(412) 776-3130

PROCESS CORP.

163 Thorn Hill Road

Warrendale, PA 15086

TXTWRT: An RT-11 Text Formatting Program

PDP-11 Operating System: RT-11

Keywords: • Graphics • Presentation aids
• Programming tools

Memory required: 11.3KW.

This program helps programmers create effective text and graphics displays on "smart" terminals. Full support of the ANSI-standard escape sequence control strings used by DIGITAL's video and printing terminals is provided. The output can be routed directly to the terminal or to an ASCII stream file; or, TXTWRT will create an output file suitably formatted as either FORTRAN IV or MACRO-11 source statements. DECUS number 11-704.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

Typist

PDP-11 Operating System: RSTS

Keywords: • Forms management

Memory required: 8K user area.

This series of programs is designed to emulate the Typist program from Dartmouth College. Typist takes an input file of ASCII text and realigns typed lines where necessary. Output from Typist can be edited and used as input to Typist. DECUS number 11-87.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

TYPSET — Digitized Character Subroutines**PDP-11 Operating System:** RSX**Keywords:** • Device drivers/handlers • Graphics
• Presentation aids

TYPSET is a collection of FORTRAN subroutines for producing characters on a ZETA plotter. Subscripting, superscripting, backspacing, and variable spacing between letters are provided. The characters can be skewed to any angle, and the height-to-width (aspect) ratio also can be varied.

A portion of the TYPSET software allows users to generate their own symbols and character sets. The characters are grouped into alphabets, the majority with both upper- and lowercases. Punctuation; mathematical, map, music, weather, and electrical symbols; and astrological signs also are included.

A version of this product is available for VAX computers.

Price: \$1200**Contact:** Bill Manos, Product Manager
(415) 372-7568

NICOLET COMPUTER GRAPHICS DIVISION

777 Arnold Drive, P.O. Box 3020

Martinez, CA 94553

/usr/tools**PDP-11 Operating System:** ULTRIX-11**Keywords:** • Documentation tools • Media • Printing

This software, written in C, allows the user to produce documentation, manuals, text, and similar publications on UNIX*-based DIGITAL systems with the etp laser printer. Control is maintained in house while providing a more professional appearance for the documents through the use of publishing-quality fonts that are on your DIGITAL computer.

The etp 8/300 laser printing system allows the user to produce documents more quickly and efficiently. The 8/300 can be used as either a final output device or as a proof before a file is sent to a typesetter.

The /usr/tools software supports the laser printer with text-formatting utilities of device-independent troff. More than 30 typeset-quality fonts are available. A font-sizing program is included with the software, allowing the user to create documents that use multiple fonts and sizes. The fonts are provided in a 24-point master size. The user can then adjust specific characters within the text to the desired point size.

* UNIX is a trademark of AT&T Bell Laboratories.

A version of this product is available for VAX computers.

1402 Text Management

Price: \$1695 - \$18,870

Contact: Bill Fullilove
(503) 639-4024

ETP SYSTEMS, INC.
10150 S.W. Nimbus, Building E2
Portland, OR 97062

VOILA!

PDP-11 Operating System: CTS-300, RSTS, RSX, RT-11

Keywords: • Application development • Programming tools
• Report writer

This multiframe free-format report-generating system can be used by both programmers and nonprogrammers to quickly and easily create ready-to-use business-oriented report programs and source codes in a variety of DIGITAL-based operating systems and language compilers. VOILA! enables its users to visualize and manipulate the format of text and data that will appear on the final generated report while the report is being created and prior to program generation.

Text and data manipulation is accomplished by use of special function keys that can put the user into any one of nine modes. Whenever the user enters a mode, the text or data created or repositioned on the CRT screen relates to that mode.

VOILA! can readily be superimposed over any existing data file structure.

A version of this product is available for VAX computers.

Price: \$1250 - \$2500

Contact: Sales Department
(412) 269-1700 or (800) 245-6190

EXTENDED APPLICATIONS, INC. (EAI)
410 Rouser Road, Airport Office Park, Building #1
Coraopolis, PA 15108

VT152.TEC

PDP-11 Operating System: Independent

Keywords: • Programming tools

VT152.TEC, written in TECO source code to provide full screen-editing capability for TECO, is a powerful text editor that runs under most PDP-11 operating systems. VT152.TEC takes advantage of the additional function keys available on a VT100-class terminal. Several new features are provided, including text formatting, left- or right-word cursor positioning, sorting, screen paging, and an insert/replace input mode. VT152.TEC replaces VEG.TEC, VT52.TEC, and SORT.TEC. DECUS number 11-474.

Restrictions: VT152.TEC must have a VT100-series terminal set up as a VT52 and must use TECO V28.

Associated documentation: The *TECO Release Notes* and the *TECO User's Guide* are not available through DECUS but may be purchased from DIGITAL.

Price: \$5 – \$225

Contact: DECUS (see Introduction)

WORD-11

PDP-11 Operating System: Micro/RSTS, Micro/RXS, RSTS, RSX

PRO Operating System: P/OS

Keywords: • List processing • Printing • Word processing

This word processing system, with more than 2000 installations worldwide, has acquired a proven record of effectiveness and reliability. The system also handles a variety of printers, including laser printers.

WORD-11's hierarchical menu structure facilitates ease of use, and the labeled keys make WORD-11 easy to learn. Users can create and edit documents on line, print them on hard-copy output devices, and maintain an index of documents on disk. Advanced features include a queued printing system, list processing, spelling-error detection, and a manager's utility.

The WORD-11 Editor allows users to display a document on the screen, including bolding and underlining, and to use editing keys to move through the text — deleting, underlining, bolding, paging, and changing margins quickly and easily. Additional editing features include automatic footnoting, table of contents and index generation, scientific equations, and column capabilities.

List Processing permits the user to mass-produce a document but still include personalized information. Spelling Error Detection includes a dictionary provided by Data Processing Design, as well as the capability to add words or create multiple user-defined dictionaries.

A version of this product is available for VAX computers.

Price: \$595 – \$9500

Contact: Eric L. Moothart, Software Marketing Director
(714) 970-1515

DATA PROCESSING DESIGN, INC.
1400 North Brasher Street
Anaheim, CA 92807

WORD-11® Encryption Option

PDP-11 Operating System: RSTS

Keywords: • Data conversion • Security • Word processing

The DMG Encryption Option protects WORD-11 documents by storing them in encrypted form. Each document can be coded and decoded, using an operator-selected key. Two master keys are provided so that responsible management personnel can decode documents. The master keys must be used together, and either one can be changed by its

authorized holder. The Option is accessed through the main menu of WORD-11.

WORD-11 is a proprietary product owned by Data Processing Design, Inc., 1400 North Brasher Street, Anaheim, CA 92807. In Canada, WORD-11 is supplied and supported by Digital Management Group Ltd.

WORD-11® is a registered trademark of Data Processing Design, Inc.

A version of this product is available for VAX computers.

Price: \$1300

Contact: Digital Management Group Ltd.
(416) 225-7788

DIGITAL MANAGEMENT GROUP LTD.

4800 Yonge Street

Willowdale, Ontario M2N 6G5 Canada

WORD: Document Spelling Checker/Corrector

PDP-11 Operating System: RSTS, RT-11

Keywords: • Data dictionary • Word processing

Memory required: 28KB.

This package consists of a 15,000-word dictionary file and simple programs that allow the dictionary to be used in the correction of spelling errors in documents. DECUS number 11-694.

Price: \$5 - \$225

Contact: DECUS (see Introduction)

WordMARC Author™

PRO Operating System: P/OS

Keywords: • Office systems • Scientific • Word processing

WordMARC offers the functionality and ease of use of dedicated word processors. Documents are printed as they are displayed on the screen.

WordMARC Author™ is fully compatible with WordMARC Composer,™ a full-featured text editing and formatting program. WordMARC Author features include automatic pagination, multiple indentation, hyphenation, decimal tabs for tables, headers and footers, floating footnotes, search and replace, automatic format and reformat, and access to multilevel subfiles. WordMARC Author provides powerful editing functions, such as cut and paste, copy from a displayed outside file, and copy, erase, and move of word, sentence, paragraph, page, or columnar blocks.

MARC's communication program, LinkMARC,™ transfers fully compatible WordMARC documents between personal computers running WordMARC and UNIX* and VMS superminicomputers running WordMARC.

Price: \$95 – \$8900

Contact: Sheri Heffley
(415) 326-1971

MARC SOFTWARE INTERNATIONAL, INC.
260 Sheridan Avenue
Palo Alto, CA 94306

WordMARC Composer™

PRO Operating System: P/OS

Keywords: • Office systems • Report writer • Scientific
• Word processing

The WordMARC system includes a spelling checker accessing four dictionaries; a 32-field list processing feature for customized correspondence and reports; automatic table of contents, paragraph numbering, cross-reference, index preparation, and floating footnotes; and user-defined glossary macros. WordMARC provides fully integrated, advanced scientific typing. All input of super- and subscripts and alternate characters occurs within WordMARC, using the same editing commands and functions as normal text entry.

Automatic pagination or user-designated page breaks and document orientation allow easy manipulation of long reports. Unlimited formatting capabilities give control for individual styles of letters, memos, and standardized manuals.

WordMARC Author,™ a companion product designed for people who are concerned primarily with content, is fully compatible with WordMARC Composer. MARC's communication program, LinkMARC,™ transfers fully compatible WordMARC documents between personal computers running WordMARC, and UNIX* and VMS superminicomputers running WordMARC.

Price: \$495 – \$8900

Contact: Sheri Heffley
(415) 326-1971

MARC SOFTWARE INTERNATIONAL, INC.
260 Sheridan Avenue
Palo Alto, CA 94306

X

PDP-11 Operating System: RSTS, RSX, RT-11

Keywords: • File management • Word processing

This line editor for handling and manipulating characters is used in text processing to edit general files, such as batch control files and program files. One-letter commands enable the user to list, add, merge, duplicate, and delete characters or lines. X is terminal independent and can be used on a VT220 or an LA36 terminal.

X is written in BASIC and is provided in source form.

A version of this product is available for VAX computers.

1406 Text Management

Price: £99 – £130

Contact: M. Stewart

(441) 897-9731 ext. 17 or Telex: 8813271 GECOMS

PLAN PLUS UK

23 Park Road

London KT3 5AE United Kingdom

Trade



The Bettmann Archive

Automated Collection Management

PDP-11 Operating System: RSX

Keywords: • Banking • Credit • Retail

This software automates the collection of delinquent accounts. The system determines when an account is put into collection, schedules accounts for collector activity, automates dunning letters to customers, and removes accounts from collection when cured.

The system is parameterized for easy user modification. The system is intended for major retailers or banks.

Price: \$100,000 – \$200,000

Contact: Steven Karpen, Systems Director

(617) 568-1411

AFI/DATATROL

Brent Drive

Hudson, MA 01749

Clothier

PDP-11 Operating System: CTS-300, RT-11

Keywords: • Point of sale • Purchasing • Retail
• Textiles/clothing

This complete system for the medium-sized clothing retailer keeps track of the purchasing and merchandising of clothing by style, color, size, vendor, and branch location for optimum stock reporting. Each item is identified by a 9-digit SKU number, description, size table number, season cycle, reorder Y or N, reorder cost, net cost, retail price, ticket price, and so on.

A version of this product is available for VAX computers.

Price: \$3000 – \$10,000

Contact: Nigel Harris

(613) 829-8888

HARRIS COMPUTER SYSTEMS

16 Credit Union Way

Nepean, Ontario K2H 8R6 Canada

Credit Authorization

PDP-11 Operating System: RSX

Keywords: • Credit • Point of sale • Retail

Full, positive on-line credit authorization for a retailer's in-house credit card is provided. A link on line to third-party authorization systems (MC, AE, and so on) is optional. The system is interfaced to major vendor point-of-sale systems.

Price: \$100,000 – \$200,000

Contact: Steven Karpen, Systems Director

(617) 568-1411

AFI/DATATROL
Brent Drive
Hudson, MA 01749

ICAS 1123—Plus (Inventory Control Accounting System)

PDP-11 Operating System: RSX

Keywords: • Accounting • Inventory • Point of sale • Retail

This menu-driven point-of-sale invoicing package for part suppliers and inventory-intense retail establishments is structured for easy user access, with submenus for inventory control, sales, accounting, management reports, and system utilities.

- Inventory control features parts and vendor maintenance, inventory reports, supersessions, alternates, automatic ordering, and popularity pricing.
- Point-of-sale invoicing and pick lists are featured in the sales submenu.
- Accounting includes accounts receivable, accounts payable, payroll, and general ledger.
- Management reports include cost and sales analysis as well as core, audit, pick list, and sales reporting.
- Multistore networking is featured.

A version of this product is available for VAX computers.

Price: \$10,000

Contact: Jeff Bauman

(201) 729-3197

ICAS COMPUTER SYSTEMS, INC.

160 Woodport Road

Sparta, NJ 07871

IN-TOUCH™

PDP-11 Operating System: RSTS

Keywords: • Inventory • Point of sale • Retail • Wholesale

This full retail entry/control system at cashier point of sale is flexible enough to match the most imaginative merchandising techniques. The system provides variable pricing for each quantity or customer code and a suggested order quantity report based on movement history as well as trend and user-defined seasonal factors. Modules have access security and data security through a management-maintained table of passwords, allowing accounting control and definition of responsibility. A user needs minimal training to learn the system, which allows for preentry of promotional prices with starting and ending dates, has provisions for statistical analysis of inventory adjustments and analysis, and produces a salesperson productivity report. Approval is required for charges beyond credit limit, for merchandise returns and credit memos, and for price override at point of sale.

The system provides daily back-office reporting of charges beyond limit, merchandise returns, and price overrides; charge account aging

on call; inventory quantity and inventory lead-time warning reports; gross-profit reporting; sales dollars, turnover, and item movement reporting with charge account controls; on-line master file maintenance; single or multistore capabilities with single or multiple cashiers; multiterminal access; screen-formatted entry; selective reporting; interactive help on call; and customer, vendor, and product listings. A standard item code can allow tracking an item to a location in sales or warehouse areas; the transfer of inventory between stores is controlled; and spiff, PM, and so on, information is captured at point of sale from information in the product master file.

A version of this product is available for VAX computers.

Price: \$25,000 – \$80,000

Contact: Nathan I. Lieberman
(812) 479-6951

EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue
Evansville, IN 47714-2994

International Trade Software

PDP-11 Operating System: CTS-300, RSTS, RT-11

Keywords: • Accounting • Import/export
• Information management • Transportation

ASA's International Trade applications are simple-to-use, on-line, fully integrated information systems. The software produces the necessary documentation for customhouse brokerage and freight-forwarding operations. Additional accounting programs handle billing, receivables, payables, payment verification, and general ledger reporting functions. The system can communicate for data transmission purposes with U.S. Customs' ABI program, shippers, steamship lines, Telex, and more. The system can also handle shipment tracing, liquidations, missing documents, landed cost, warehousing, ocean and air brokerage, air freight forwarding, and TSUSA maintenance.

A version of this product is available for VAX computers.

Price: \$20,000 – \$400,000

Contact: Robert Brooks
(603) 898-7000

ASA INTERNATIONAL LTD.
10 Manor Parkway
Salem, NH 03079

MAILHOUSE™

PDP-11 Operating System: RSTS

Keywords: • Billing • Inventory • Order processing • Retail

MAILHOUSE is completely interactive and gives a business the flexibility to properly track and maintain an invoice from the time an order is received from a customer until shipment is complete. Inventory levels are automatically maintained on line during order entry. Items

are placed on back order if invoice entry indicates that an adequate inventory does not exist to fulfill an order. In cases of phoned-in orders, the sales tax and UPS or parcel post charges are automatically included in the amount while the customer is still on the line.

Once an invoice is entered, the operator must obtain approval for credit on those invoices selected by MAILHOUSE as ready for shipment. The order will be held until credit clearance is given.

Back-ordered invoices are automatically checked each day to determine the availability of inventory for items. The results are a cross-reference report that gives the operator knowledge of the invoices the system has on hold. MAILHOUSE includes an invoice editor designed to minimize operator problems by simulating invoice entry.

In addition to invoicing, MAILHOUSE allows a business to keep track of sales, cost of sales, taxes, inventory levels, gross profit, and movement. To comply with FTC regulations, a day-counter and a notifier for each invoice are included.

A version of this product is available for VAX computers.

Price: \$25,000 – \$30,000

Contact: Nathan I. Lieberman
(812) 479-6951

EVANSVILLE DATA PROCESSING CORP.
1010 S. Weinbach Avenue
Evansville, IN 47714-2994

Point of Sale

PDP-11 Operating System: RSTS

Keywords: • Financial analysis • Inventory • Point of sale
• Purchasing

This stand-alone system is fully operational in multiple checkout situations. The special terminal supports laser scanner, credit card reader, overprinting, and so on. Full cash control and invoice production are provided even if the processor fails.

The cost for each checkout is around \$3000, and multiple checkouts for each processor keep total costs for each checkout under \$6000.

A version of this product is available for VAX computers.

Price: \$3000 – \$100,000

Contact: Dr. E. A. Haworth
(061) 248-7100

MANCOS COMPUTERS
3 Wynnstay Grove, Fallowfield
Manchester M14 6XG United Kingdom

POS/MIMS: Point-of-Sale System for Lumber Yards/Home Building Center Industry

PDP-11 Operating System: CTS-300, RSTS

Keywords: • Point of sale

POS/MIMS is a complete set of computer programs designed specifically for lumber and building material dealers. The system provides computerized point-of-sale billing, accounts receivable, and inventory control.

Price: \$34,000 – \$260,000

Contact: Pete McConnell

(412) 823-7440

MCS, INC.

400 Penn Center Boulevard

Pittsburgh, PA 15235

Retail Furniture System

PDP-11 Operating System: RSTS

Keywords: • Financial management • Inventory
• Point of sale • Retail

This integrated order entry, accounts receivable, and inventory management system helps firms control the retail process. The system concentrates on the accounting for sales and inventory and incorporates the management control tools to minimize costs and maintain a fair return on investment. Retail Furniture System identifies each piece in inventory and will identify its location on call. The system also reports the need to fill a location on the display floor due to merchandise sales.

Operated in a conversational, interactive mode, Retail Furniture System performs extensive edit checking, thereby ensuring the integrity of the data. At the point of sale, a receipt is printed, and inventory and accounts receivable are automatically updated. The inventory-received entry function immediately updates inventory and causes inventory tags to be printed. Through that function, special-order and sold items are tagged and flagged. Available as options to the Retail Furniture System are EDPC's ABLE® general ledger and financial management reporting system, AiM™ (Affordable Information Management) payables, AiM payroll, and other complementary systems.

A version of this product is available for VAX computers.

Price: \$29,000 – \$80,000

Contact: Nathan I. Lieberman

(812) 479-6951

EVANSVILLE DATA PROCESSING CORP.

1010 S. Weinbach Avenue

Evansville, IN 47714-2994

Shelf**PDP-11 Operating System:** RSTS**Keywords:** • Distribution • Retail • Warehousing
• Wholesale

Memory required: 8K.

Shelf/floor space productivity analysis allows a retailer or marketing student to analyze the square-foot profitability of product lines. DECUS number 11-212.

Restrictions: Shelf requires 132-column-width paper.

Price: \$5 - \$225**Contact:** DECUS (see Introduction)**Specialty Item and Furniture Store System****PDP-11 Operating System:** Micro/RSTS**Keywords:** • Accounting • Inventory • Order processing
• Retail

This inventory control and accounting system is designed for the store with one or more showrooms that share a common warehouse for shipping. The system, written in DIBOL 83, processes orders, deposits, and delivered business receipts and maintains an accurate inventory count for the showroom counter report. Movement analyses by item provide Purchasing with daily requirements.

Price: \$3850**Contact:** Margaret Hodder

(617) 484-1709

CORPORATE CONSULTING CO.

556 Trapelo Road

Belmont, MA 02178

SpiriTak™**PDP-11 Operating System:** Micro/RSX**Keywords:** • Inventory • Point of sale • Retail
• Sales analysis

Memory required: 256KB.

This point-of-sale package, written in FORTRAN, is designed for liquor stores. This software interfaces with Data Terminal Systems 545 electronic cash registers and the DIGITAL MicroPDP-11 and MicroVAX II. The programs in the standard package can be divided into eight major areas: inventory item maintenance, cash register communications, standard reports, user reports, purchase orders and receiving, ticket printing, utility file maintenance, and security. The standard package provides the necessary tools for operating and maintaining a complete inventory management system.

Optional modules are available for additional functionality. Some modules require additional hardware for operation.

1414 Trade

All programs are password protected and selected from a menu at the user's terminal. Each program produces a printed report of its operation to ensure a proper accounting of activity.

Price: \$9900 - \$11,900

Contact: William R. Rogers
(716) 631-0610

AMHERST SYSTEMS INC.
1 American Drive
Buffalo, NY 14225

Sporty

PDP-11 Operating System: CTS-300, RT-11

Keywords: • Inventory • Retail • Sales analysis

This complete inventory management system for the sporting goods retailer with branch locations records a year's inventory through purchasing, receiving, transferring, selling, and reporting. Sporty consists of four screen menus of programs. The first menu is for the setup and maintenance of files, such as inventory item, department/class, vendor, and size tables. The second menu allows for purchasing, receiving, and transferring stock. The third menu is for recording sales and for producing reports that reflect the status of the inventory. The fourth menu covers a complete selection of reports.

A version of this product is available for VAX computers.

Price: \$5000 - \$10,000

Contact: Nigel Harris
(613) 829-8888

HARRIS COMPUTER SYSTEMS
16 Credit Union Way
Nepean, Ontario K2H 3R6 Canada

VantagePoint

PDP-11 Operating System: RSTS

Keywords: • Accounts receivable • Inventory • Point of sale
• Wholesale

This secure, easy-to-operate system includes complete inventory control and accounts receivable management for wholesale and/or retail businesses. VantagePoint facilitates the management of large, multiple-store and warehouse inventories; realizes savings for the user through LIFO valuation; provides detailed 50-character item descriptions for invoices and estimates; and provides a consolidated picture of the user's inventory.

VantagePoint was developed to provide management with the tools to make crucial business decisions. The flexible, customizable system can be integrated with existing manual or computerized accounting systems. The system provides management reports, improves cash flow with its method of accounts receivable, and helps maximize profit with

its complete inventory management system combined with point of sale.

A version of this product is available for VAX computers.

Price: \$15,000 – \$30,000

Contact: Ellen L. Howlett
(602) 887-0530

UNIQUE CONSULTING SERVICES
3234 N. Reno, P.O. Box 55015
Tucson, AZ 85705

VCC (The Video Outlet Control Center)

PDP-11 Operating System: CTS-300, RT-11

PRO Operating System: RT-11

Keywords: • Arts and leisure • Information management
• Inventory • Retail

This fourth-generation system for automating the home video retail store includes inventory maintenance, daily consolidation, accounting functions, rental reservation, point of sale, and so on and can create and read barcode labels. VCC is extremely simple to use; untrained users can be productive within minutes.

Installing the system requires the entry of financial accounting structure rental stock, sale stock levels, and rental customer descriptions. After installation, point-of-sale functions change the inventory status automatically when a sale or rental is made. The inventory status is also affected when the ordered sale stock is received or when the rental stock is returned. Included is a totally integrated general ledger system that automatically generates period balance sheets and statements of profit and loss. The system is designed to increase revenues by capturing all possible charges.

The system supports two terminals on the Professional 350.

Price: \$2780 – \$5200

Contact: Peter McWha
(613) 225-8750

LOGICAID LTD.
154 Collonnade South
Nepean, Ontario K2E 7J5 Canada

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Transportation



Robert Pyle

Automotive System

PDP-11 Operating System: RSTS

Keywords: • Accounting • Automotive • Inventory • Payroll

The Automotive System provides accounts receivable, accounts payable, payroll, general ledger, a purchase order system with guide history, order entry and billing, invoice and picking ticket generation, sales analysis, inventory control and analysis, over-the-counter invoicing capabilities, inventory cross-reference and information lookup, and word and list processing.

A version of this product is available for VAX computers.

Price: \$2000 - \$20,000

Contact: Frank Zimmer, President
(201) 231-9400
UNITRONIX CORP.
50 County Line Road
Somerville, NJ 08876

Caswell Model (Apprehend)

PDP-11 Operating System: RSTS

Keywords: • Decision support • Modeling/simulation

By simulating various traffic control ideas, this tool allows local planning and zoning boards to predict the impact of development on local roads.

Model is written in BASIC-PLUS.

Price: \$500 - \$1000

Contact: John R. Caswell
(617) 259-0830
JOHN R. CASWELL, CONSULTANT, P.E.
P.O. Box 98
Lincoln, MA 01773

COLTS (Computerized On-Line Transportation System)

PDP-11 Operating System: Micro/RSTS, RSTS

Keywords: • Accounting • Billing • Payroll • Sales analysis

Written in DIBOL, this software handles the functions of freight billing/accounts receivable, general ledger, fuel and mileage, operations, accounts payable, driver notification, settlement payroll, dispatch, and vehicle maintenance. The system is designed for long-haul trucking companies that operate 25 or more trucks. COLTS provides sales analyses tools and the ability to designate each truck as a cost center for P & L purposes. Same-day billing improves cash flow, and past-due account collection reduces the time spent preparing state fuel and mileage reports. The payroll system handles office, company driver, and owner/operator accounts.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: David Ducey

(515) 287-6683

SYSTEMS SUPPORT, INC.

P.O. Box 1057

Clive, IA 50053

DFI/FMS (Dealer Finance and Insurance/Forms Management System)

PDP-11 Operating System: Micro/RSX, RSX

PRO Operating System: P/OS

Keywords: • Automotive • Data base management
• Forms management • Sales analysis

Memory required: 0.5MB to 1MB.

DFI/FMS, written in BASIC, allows the finance manager or salesperson to calculate the financing and insuring of a sale. The program is similar to a spreadsheet template designed especially for auto financing but is simpler to operate. By entering sales price, trade, deposit, and rate (add-on or APR), you receive the monthly payment figure with insurance included. You can also remove, add, or change a value and compute a new payment.

In a distributed environment, the salesperson enters the buyer statistics (name, address, and so on), then prints the sales contract for signature. The deal is now closed. The rest of the contracts/forms can be printed in the remote office at any time.

The data base of customer information is available for use as a mailing list as well. One of the modules allows you to extract pertinent information and to create a file that can be merged with standard word processing software.

GMAC, Chrysler Credit, Registry, and Rusty Jones are some of the supported contracts. Any new contracts can be added on a time-and-materials cost basis.

A version of this product is available for VAX computers.

Price: \$2000 - \$5000

Contact: Andrea Loraditch

(617) 422-8596

A.C.S. (AUTOMOTIVE COMPUTER SERVICES)

10 Tanglewood Road

Sterling, MA 01564

EMDA's Super Car Rental and Control System

PDP-11 Operating System: RT-11

PRO Operating System: RT-11

Keywords: • Accounting • Automotive • Inventory
• Order processing

1420 Transportation

This modular system for car rental agencies having from 100 to 5000 cars can run with one person entering all information or can be expanded to a completely on-line, real-time system with CRT terminals and slaved printers at each check-out or check-in station. The system provides complete car control; printed customer rental agreements; on-line checkin; dispatch, ready-line, and garage and maintenance controls; reservations; car selection at checkout; and instant status check of the cars. EMDA is a complete system that ends with a daily business report and can then be interfaced to existing accounting systems.

Modules may be purchased separately. For large installations, EMDA runs on multiple micro-11s linked in a local area network. For small installations, the system can run on a single micro-11.

A version of this product is available for VAX computers.

Price: \$8000 - \$45,000

Contact: Edwin J. Stevens
(818) 795-5991

EMDA INC.

77 N. Oak Knoll #104
Pasadena, CA 91101

EMIS (Equipment Management Information System)

PDP-11 Operating System: CTS-300, DSM (DSM-11), IAS, RSTS, RSX

Keywords: • Information management • Inventory
• Property maintenance

This comprehensive fleet-management system reports on equipment, inventory, fuel, repairs, finances, preventive maintenance, and shop productivity; identifies vehicles and personnel with good and bad MPG; tracks all the detailed data needed for day-to-day operation; and summarizes key cost and performance items for management.

A version of this product is available for VAX computers.

Price: Available upon request

Contact: John Gorman
(305) 832-3799

INTEC SYSTEMS INC.

400 Australian Avenue
West Palm Beach, FL 33401-9990

FLEET™

PDP-11 Operating System: RSTS

Keywords: • Cost accounting • Financial analysis
• Office systems • Property maintenance

FLEET develops a complete analysis of the operating costs of a fleet of motor vehicles, heavy construction equipment, manufacturing machinery, or other units having either an odometer or an hour meter.

The package also issues preventive-maintenance reminders, based on a set of 99 user-defined parameters.

The package accumulates a period's total costs by cost categories and by vendor and simultaneously accumulates the total of the individual cost occurrences by cost categories for each specific unit. Individual fuel, repair, or cost vouchers are entered at random and according to any user-defined frequency or period. An individual unit's accumulated miles or hours can be entered with each cost voucher or once at the end of the period.

For reporting purposes, units can be subdivided into logical groups for closer operating cost comparisons.

A version of this product is available for VAX computers.

Price: \$4000 - \$7300

Contact: Nathan I. Lieberman
(812) 479-6951

EVANSVILLE DATA PROCESSING CORP.

1010 S. Weinbach Avenue

Evansville, IN 47714-2994

Flight Watch

PDP-11 Operating System: CTS-300, RT-11

Keywords: • Aeronautics/aerospace • Inventory
• Property maintenance • Scheduling

Flight Watch is a complete aviation management package for corporate flight departments, fixed-base operators, charter and commercial operators, as well as regional airlines. Flight Watch includes aircraft maintenance; inventory management; a scheduling system for passengers, aircraft, and crew; a charter quote and billing system; departmental financial and operational reports; and a complete set of general accounting packages for FBOs.

The maintenance system features aircraft status and maintenance-due reports, maintenance cards, inspection lists, and a history report of scheduled and unscheduled maintenance. The maintenance system also includes a subassembly and parts transfer system, rotatable parts inventory, and current information on all ADs and SBs.

The scheduling system features automatic trip and crew scheduling, trip tickets and flight log processing, charter quotes, and billing. Management reports include charter trip analysis, audit of trip changes, scheduling status, crew examination requirements, and daily status — crew/aircraft, aircraft utilization, pilot currency, pilot time, and flight history.

A version of this product is available for VAX computers.

Price: \$14,000 - \$45,000

Contact: Ben D. Farmer, President
(404) 452-7654 or (800) 241-6805

ASCO FLIGHT WATCH, INC.
3066 Mercer University Drive
Atlanta, GA 30341

Pigeonhole

PDP-11 Operating System: RSTS, RSX

Keywords: • Planning aids • Scheduling

Memory required: 64KB.

This totally interactive, computer-assisted delivery journey planning system, written in FORTRAN-77, provides user-controlled trade-offs of objective function weightings covering service levels, transport overhead, and running cost and benefit parameters.

A version of this product is available for VAX computers.

Price: £20,000

Contact: Harry O'Brien
(0438) 714045

LOGISTICS SUPPORT

12, Robbery Bottom Lane, Oaklands
Welwyn, Herts AL6 0UW United Kingdom

RAFT (Revenue Accounting for Truckers)

PDP-11 Operating System: CTS-300, RT-11

Keywords: • Accounting • Cost accounting
• Information management • Payroll

RAFT, developed for the short-haul and long-haul trucking company, consists of the Revenue Accounting (Probilling), Vehicle Equipment Costing and Maintenance, General Ledger and Financial Statements, and Payroll modules. The Revenue Accounting module uses the probill as entry to the system and updates both receivables and various statistics, including customer history, employee performance, and traffic flow. This module also produces weekly invoices and monthly statements.

Probills are retained on an open-item basis and are paid either on an individual or a weekly basis. Statistics are also produced for delivery efficiency upon entry of the probill "pink" (delivery copy).

A version of this product is available for VAX computers.

Price: \$3000 - \$10,000

Contact: Nigel Harris, President
(613) 829-8888

HARRIS COMPUTER SYSTEMS

16 Credit Union Way

Nepean, Ontario K2H 8R6 Canada

TAPS (Transportation Accounting Packages)

PDP-11 Operating System: RSTS

Keywords: • Accounts payable • Accounts receivable
• General ledger • Sales analysis

This system takes care of the accounting functions for the trucking company — from free-form invoicing through state reporting — and includes accounts payable, general ledger, accounts receivable, miles and gallons reporting, owner-operator settlement programs, and sales analysis.

A version of this product is available for VAX computers.

Price: \$10,000 – \$20,000

Contact: Anthony J. Ruggeri
(314) 644-4050

AUTOMATED INFORMATION INC.
6710 Clayton Road
St. Louis, MO 63117

Transportation/Airline/Airport Management Information System

PDP-11 Operating System: IAS, RSTS, RSX, RT-11

Keywords: • Accounting • Information management
• Service industries • Statistics

Menu driven and modularly designed for sectional add/delete, the airport MIS system provides on-line and over-the-counter sales and billing information for charter, commuter, ramp fuel and services, flying school records, engineering and aircraft maintenance, and hangar and space rental of airport facilities. In addition to all financial data, MIS detail is maintained on all resident information throughout the system and can be reported in any format. Although designed for the aviation industry, this system has applications in other segments of the transportation sector. MIS interacts fully with the Armadale business system and is programmed in Pascal II.

A version of this product is available for VAX computers.

Price: \$4500 – \$10,500

Contact: Michael G. Sifton
(416) 477-8000

ARMADALE SYSTEMS INC.
Toronto Buttonville Airport
Markham, Ontario L3P 3J9 Canada

WHAT-IS® — The Answer to Transportation and Supply/Distribution Networks

PDP-11 Operating System: IAS, Micro/RSTS, Micro/RSX, None required, RSTS, RSX, RT-11

Keywords: • Decision support • Distribution • Planning aids

1424 Transportation

This tool for transportation planners, managers, and consultants assists decision makers in setting up least-cost distribution networks for supply and demand systems. The program uses optimizing computing methods that minimize the fixed and variable costs of serving customers from various depots and warehouses. The program can also be used to evaluate potential new locations for supply facilities.

The package will meet minimum, maximum, and fixed demands subject to any supply limits or other constraints imposed. Easy-to-understand data table input is used and integrates with any editor, word processor, or spreadsheet that stores standard ASCII files.

A version of this product is available for VAX computers.

Price: \$695

Contact: Sales Department

(818) 888-3336

APPLIED OPERATIONS RESEARCH, INC.

22056 Saticoy Street

Canoga Park, CA 91303

Reference Guides



Guide to Contents

This alphabetical list of software product titles by industry/generic discipline uses **bold type** to indicate products available through DIGITAL and • to indicate products that run on P/OS, RSTS, RSX, RT-11, and ULTRIX-11 operating systems.

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Accounting						
A-to-Z Compu-Share™ Accounting Family Accounts Payable . . .	○	○	●	○	○	4
A-to-Z Compu-Share™ Accounting Family Accounts Receivable . . .	○	○	●	○	○	4
A-to-Z Compu-Share™ Accounting Family General Ledger	○	○	○	○	○	5
A-to-Z Compu-Share™ Accounting Family Inventory Control	○	○	●	○	○	6
A-to-Z Compu-Share™ Accounting Family Order Entry	○	○	●	○	○	6
Abax Depreciation System	○	●	○	○	○	7
ABLE® Client Writeup System	○	○	○	○	○	8
ABS Accounting Software	○	●	●	○	○	8
Accountant II Accounts Payable System	○	○	●	○	○	9
Accountant II Accounts Receivable System	○	○	○	○	○	9
Accountant II General Ledger System	○	○	●	○	○	10
Accountant's Time and Billing System	○	○	○	○	○	10
Accounting, Integrated	○	○	○	○	●	11
Accounts Payable	○	○	○	○	○	11
Accounts Payable	○	○	○	○	○	12
Accounts Payable	○	○	○	○	○	12
Accounts Payable	○	○	○	○	○	12
Accounts Payable	○	○	○	○	○	13
Accounts Payable	○	○	○	○	○	13
Accounts Payable	○	○	○	○	○	13
Accounts Payable	○	○	○	○	○	14
Accounts Payable	○	○	○	○	○	14
Accounts Payable	○	○	○	○	○	14
Accounts Payable	○	○	○	○	○	15
Accounts Payable	○	○	○	○	○	16
Accounts Payable	○	○	○	○	○	16
Accounts Payable	○	○	○	○	○	16
Accounts Payable	○	○	○	○	○	17
Accounts Payable	○	○	○	○	○	18
Accounts Payable	○	○	○	○	○	18
Accounts Payable and Cash Disbursements Package	●	●	○	○	○	19
Accounts Payable System	○	○	○	○	○	20
Accounts Payable System	○	○	○	○	○	20
Accounts Payables	○	○	○	○	○	21
Accounts Receivable	○	○	○	○	○	21
Accounts Receivable	○	○	○	○	○	21
Accounts Receivable	○	○	○	○	○	22
Accounts Receivable	○	○	○	○	○	22
Accounts Receivable	○	○	○	○	○	22
Accounts Receivable	○	○	○	○	○	22
Accounts Receivable	○	○	○	○	○	23
Accounts Receivable	○	○	○	○	○	23

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Accounts Receivable	○	○	●	●	○	24
Accounts Receivable	○	○	○	○	●	25
Accounts Receivable	○	○	○	○	○	25
Accounts Receivable	○	○	○	○	○	26
Accounts Receivable and Statement Generation	●	○	○	○	○	27
Accounts Receivable System	○	○	○	○	○	28
Accounts Receivable/Billing	○	○	○	○	○	28
Accounts Receivables	○	○	○	○	○	29
A/D (Fixed Assets and Depreciation), MCBA, Inc.	○	○	○	○	○	29
AiM™ Payables	○	○	○	○	○	30
AiM™ Payroll — Interactive	○	○	○	○	○	31
AiM™ Receivables and Billing System	○	○	○	○	○	31
AIM/AP (Accounting Information Manager for Accounts Payable)	○	○	○	○	○	32
AIM/PR (Accounting Information Manager for Payroll with Cost Accounting)	○	○	○	○	○	32
A/P (Accounts Payable)	○	○	○	○	○	33
A/P (Accounts Payable), MCBA, Inc.	○	○	○	○	○	33
APPGEN Accountants Client Write-Up	○	○	○	○	○	34
APPGEN Accounts Payable	○	○	○	○	○	35
APPGEN Accounts Receivable	○	○	○	○	○	35
APPGEN Fixed Assets	○	○	○	○	○	36
APPGEN General Ledger	○	○	○	○	○	37
APPGEN Job Cost	○	○	○	○	○	37
A/R (Accounts Receivable)	○	○	○	○	○	38
A/R (Accounts Receivable), MCBA, Inc.	○	○	○	○	○	38
BAS (Budgetary Accounting System)	○	○	○	○	○	39
Buddy's Membership Dog Club Module	○	○	○	○	○	39
Budgetary Accounting	○	○	○	○	○	40
C-11 Accounts Payable	○	○	○	○	○	40
C-11 Accounts Receivable	○	○	○	○	○	41
C-11 General Ledger	○	○	○	○	○	41
C-11 Integrated Accounting Package	○	○	○	○	○	42
C-11 Inventory	○	○	○	○	○	43
C-11 Inventory I	○	○	○	○	○	43
C-11 Job Cost	○	○	○	○	○	44
C-11 Payroll	○	○	○	○	○	44
C-11 Purchase Order Processing	○	○	○	○	○	45
CAS (Comprehensive Accounting System)	○	○	○	○	○	45
CAS.1 (General Ledger)	○	○	○	○	○	46
CAS.2 (Accounts Payable)	○	○	○	○	○	47
CAS.3 (Accounts Receivable)	○	○	○	○	○	48
CAS.4 (Payroll)	○	○	○	○	○	49
CAS.5 (Inventory Management)	○	○	○	○	○	49
CAS.6 (Order Entry/Invoicing)	○	○	○	○	○	50
CAS.7 (Purchase Order)	○	○	○	○	○	50
CAS.8 (Sales Analysis)	○	○	○	○	○	51
Chariot	○	○	○	○	○	51
Client Accounting	○	○	○	○	○	52
Client Write-Up	○	○	○	○	○	52
Clover Personal Income Tax Package	○	○	○	○	○	53
Complete Accounting Package	○	○	○	○	○	54
CopyCalc	○	○	○	○	○	54
CPA Payroll	○	○	○	○	○	55
CPA Time and Billing	○	○	○	○	○	55
CSI Accounts Payable	○	○	○	○	○	56
CSI Business System	○	○	○	○	○	56
CSI General Ledger	○	○	○	○	○	56
CSI Payroll	○	○	○	○	○	57

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
DDP APS (Accounts Payable System)	○	●	●	●	○	57
DDP ICSF (Inventory Control System)	○	●	●	●	○	58
DDP OEIF (Order Entry/Invoicing)	○	○	●	●	○	58
DDP PAR (Accounts Receivable)	○	●	●	●	○	59
DDP PAS (General Ledger)	○	●	●	●	○	59
DDP PAY (Payroll System)	○	○	●	●	○	60
DDP PCSF (Purchasing Control System)	○	●	●	●	○	61
Depreciation Schedule	○	●	○	○	○	61
DIBS-11	○	○	●	○	○	62
DIBS-11 Order Entry/Inventory Management for CTS-300	○	○	○	○	○	62
DIBS-11 Order Entry/Inventory Management for RSTS/E	○	●	○	○	○	63
DIBS-11/CTS-300	○	○	○	○	○	63
Due-Date Monitoring	○	○	●	●	○	64
Evets Accounting Systems	○	○	○	●	○	64
FACS — Accounts Payable	○	○	●	○	○	65
FACS — Accounts Receivable/Sales Analysis	○	○	○	○	○	65
FACS — Fixed Asset Management	○	●	○	○	○	66
FACS — General Ledger/Job Costing	○	○	●	○	○	67
FACS — Payroll	○	○	○	○	○	67
FIFO: FIFO Inventory	○	●	●	●	○	68
Fiscal Accounting	○	○	●	○	○	68
Fixed Asset Accounting	○	○	○	○	○	69
Fixed Asset Depreciation	○	○	●	○	○	70
Fixed Assets	○	○	●	○	○	70
Fixed Assets	○	○	●	○	○	71
Fixed Assets	○	○	○	○	○	72
Fixed Assets and Depreciation	○	○	●	○	○	72
Flexware Accounting Package	○	○	○	○	○	73
Flexware Accounts Payable	○	○	○	○	○	74
Flexware Accounts Receivable	○	○	○	○	○	74
Flexware General Ledger	○	○	○	○	○	75
Flexware Inventory Control	○	○	○	○	○	76
Flexware Order Processing	○	○	○	○	○	76
Flexware Payroll	○	○	○	○	○	77
Flexware Purchasing	○	○	○	○	○	78
Flexware Spreadsheet	○	○	○	○	○	78
FSG (Financial Statement Generator)	○	○	○	●	○	79
General Ledger	○	○	○	○	○	79
General Ledger	○	○	○	○	○	80
General Ledger	○	○	●	●	○	80
General Ledger	○	○	○	○	○	81
General Ledger	○	○	○	○	○	81
General Ledger	○	○	○	○	○	82
General Ledger	○	○	○	○	○	82
General Ledger	○	○	○	○	○	83
General Ledger	○	○	○	○	○	84
General Ledger	○	○	○	○	○	84
General Ledger	○	○	○	○	○	85
General Ledger and Financial Reporting	○	○	○	○	○	85
General Ledger and Financial Reporting	○	○	○	○	○	86
General Ledger System	○	○	○	○	○	87
GL Eleven	○	○	○	○	○	87
G/L (General Ledger)	○	○	○	○	○	88
G/L (General Ledger), MCBA, Inc.	○	○	○	○	○	88
Idaho Falls Payroll System	○	○	○	○	○	89
IFAS (Interactive Financial Accounting System)	○	○	○	○	○	89
IMPCON-FMS	○	○	○	○	○	90
Integrated Business Software	○	○	○	○	○	90

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
InterAP™	○	○	○	○	○	91
InterGL™	○	○	○	○	○	92
Inventory	○	●	○	○	○	93
IOI: Order Entry	○	○	●	●	○	93
Job Costing	○	○	○	○	●	94
MANAGE — Data Base Management System	○	○	○	○	○	94
MAXX A Management Accounting System	○	○	○	○	○	95
MBS AP (Manus Business Systems Accounts Payable)	○	○	○	○	○	95
MBS AR (Manus Business Systems Accounts Receivable)	○	○	○	○	○	96
MBS GL (Manus Business Systems General Ledger)	○	○	○	○	○	97
MJA™ Accounts Payable for the PRO 350	●	○	○	○	○	97
MJA™ Accounts Receivable for the PRO 350	●	○	○	○	○	98
MJA™ General Ledger for the PRO 350	●	○	○	○	○	99
MJA™ Order Entry/Inventory	●	○	○	○	○	99
MJA™ Payroll and Personnel	●	○	○	○	○	100
Multiuser Digital Accounting System	○	○	○	○	○	100
NCS (National Creditor System)	○	○	○	○	○	101
NFC Payroll Module	○	○	○	○	○	102
NFC Professional Accounting	○	○	○	○	○	102
NFC Property Management	○	○	○	○	○	103
OPS (On-Line Payroll System)	○	○	○	○	○	103
Order Entry	○	○	○	○	○	104
Order Entry and Inventory	○	○	○	○	○	104
Order Entry/Inventory	○	○	○	○	○	105
Order Entry/Inventory Control	○	○	○	○	○	105
PARS: Professional Time, Billing A/R	○	○	○	○	○	106
Pay (Canadian Payroll)	○	○	○	○	○	107
Payroll	○	○	○	○	○	107
Payroll	○	○	○	○	○	108
Payroll	○	○	○	○	○	108
Payroll	○	○	○	○	○	109
Payroll	○	○	○	○	○	109
Payroll	○	○	○	○	○	110
Payroll	○	○	○	○	○	111
Payroll	○	○	○	○	○	111
Payroll	○	○	○	○	○	112
Payroll	○	○	○	○	○	113
Payroll (Canadian)	○	○	○	○	○	113
Payroll System	○	○	○	○	○	114
Payroll/Checkwriting System	○	○	○	○	○	115
PAYSOLVE (Payroll)	○	○	○	○	○	115
Perspective/700 Accounts Payable	○	○	○	○	○	116
Perspective/700 Accounts Receivable	○	○	○	○	○	116
Perspective/700 General Ledger	○	○	○	○	○	117
PHENIX PASS	○	○	○	○	○	117
Pioneer COMMAND Accounts Payable Module	○	○	○	○	○	118
Pioneer COMMAND Accounts Receivable Module	○	○	○	○	○	118
Pioneer COMMAND General Ledger Module	○	○	○	○	○	119
Plycom Core Accounting Systems	○	○	○	○	○	120
PM11 Accounts Receivable	○	○	○	○	○	121
PM27 Accounts Payable	○	○	○	○	○	121
PM28 General Ledger/Financial Reporting	○	○	○	○	○	122
Pro-Accountant: Modular Integrated Accounting System	○	○	○	○	○	123
PRO-IV Accounts Payable	○	○	○	○	○	123
PRO-IV Accounts Receivable	○	○	○	○	○	124
PRO-IV Fixed Assets	○	○	○	○	○	124
PRO-IV General Ledger with Financial Report Writer	○	○	○	○	○	125
PRO-IV Inventory Control	○	○	○	○	○	125

	P/OS	R/STX	RSX	RT-11	ULTRIX-11	Page
PRO-IV Order Processing/Invoicing	●	●	●	○	○	126
PRO-IV Purchase Order	●	●	●	○	○	126
PRO-IV Tax Management	●	●	●	○	○	127
ProBiz™ Accounts Payable	○	○	●	○	○	127
ProBiz™ Accounts Receivable	○	○	●	○	○	128
ProBiz™ General Ledger	○	○	●	○	○	129
ProBiz™ Payroll	○	○	●	○	○	129
ProBiz™ Purchasing Management	○	○	●	○	○	130
PTB (Professional Time and Billing)	○	●	○	○	○	131
Purchase Order Accounting	○	○	○	○	●	132
Random-Number Generator	○	○	●	○	○	132
RAS (Receivable Accounting System)	○	●	○	○	○	133
Report Writer	○	●	●	○	○	133
Reporter	○	○	●	○	○	134
RMS-7	○	●	○	○	○	134
SACCPAY (Accounts Payable Package)	○	○	○	○	○	135
SACCREC (Accounts Receivable Package)	○	○	○	○	○	135
Safe Deposit Boxes Billing	○	○	○	○	○	136
Sauer Library	○	○	○	○	○	136
SGENLED (General Ledger Package)	○	○	○	○	○	136
Suspense Ledgers	○	○	○	○	○	137
TBS Accounts Payable System	○	●	○	○	○	137
TBS Accounts Receivable System	○	●	○	○	○	138
TBS General Ledger System	○	●	○	○	○	139
TBS Payroll Accounting	○	●	○	○	○	140
Time Management and Billing	○	○	○	○	○	140
Timeline Accounts Payable	○	●	○	○	○	141
Timeline Accounts Receivable	○	○	○	○	○	141
Timeline Fixed Assets	○	○	○	○	○	142
Timeline General Ledger and Financial Reporting	○	●	○	○	○	143
TOLAS Inquiry and Reporting System	○	○	○	○	○	143
Treasurer's General Ledger and Warrant Reconciliation	○	○	○	○	○	144
TRON Accounts Payable	●	●	●	●	●	144
TRON Accounts Receivable	●	●	●	●	●	145
TRON General Ledger	●	●	●	●	●	146
Turnkey Data	○	●	○	○	○	146
UDS General Ledger Accounting	○	○	○	○	○	147
WIP (Work In Progress)	○	○	○	○	○	147
ZIN	○	○	○	○	●	147

Agriculture

ADAM (Automated Dairy and Management)	○	○	●	○	○	150
DAIRY-MAN Dairy Herd Management System	○	○	○	○	○	150
EQUUS-11	○	○	○	○	○	151
FEED-MAN Feed Analyzer	○	●	○	○	○	152
FEED-MAN Ration Preparation	○	○	○	○	○	152
Flock Modeling and Egg Production Forecasting	○	○	○	○	○	153
Format International Feed Formulation Systems	●	○	○	○	○	153
FPS (Fruit Packing System)	○	●	○	○	○	154
HomeRange	○	○	○	○	○	154
IMS-8 (Integrated Mill-Management System-8)	○	○	○	○	○	155
MICRO FEED	●	○	○	○	○	155
PBS (Produce Brokerage System)	○	●	○	○	○	156
PFS	○	○	○	○	○	156
Produce Distribution System	○	●	○	○	○	156
TACT (Total Agribusiness Computer System)	○	○	○	○	○	157
WATER-MAN HNA (Hydraulic Network Analyzer)	○	●	○	○	○	157

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Arts and Leisure						
3-Dimension Tic-Tac-Toe	○	○	●	○	○	160
3D-Tic-Tac	○	○	●	●	○	160
Adventure	○	●	●	●	○	160
Airplane Landing Simulation Game	○	○	○	●	○	160
Airplane Landing Simulation Game for the Professional 300	○	○	○	●	○	161
Arcade Game Package	○	○	○	○	○	161
Arts	○	●	○	○	○	162
BASIC Demonstration Package	○	●	●	○	○	162
Battle Ships	○	○	○	○	○	162
Blackjack for the MINC	○	○	○	●	○	163
BOCS (Box Office Computer System)	○	○	○	●	○	163
CALEND: A Calendar Program	○	○	○	●	○	164
Calendar Printing	○	○	○	○	○	164
Chess Ingenuity®	●	●	○	○	○	164
Choose	○	○	○	●	○	165
CHSMOV — Chess-Move Recorder on a VT55 or a VT105, Under MACRO-11	○	○	○	●	○	165
CHSSLV (Chess-Problem Solver)	○	○	○	○	○	166
Country Club Accounts Receivable	○	○	●	○	○	166
Country Club Golf Handicapping System	○	○	●	○	○	166
Country Club Payroll System	○	○	○	●	○	166
Cycles	○	○	○	○	○	167
Dungeon	○	○	●	●	○	167
Dungeon for RT-11	○	○	○	○	○	168
European MINC Package #8 — Games	○	○	○	○	○	168
FLIP: A Computer Program for Fuzzy Reasoning	○	○	○	○	○	168
Games, Puzzles, and Recreation-1	○	○	○	○	○	169
Games, Puzzles, and Recreation-2	○	○	○	○	○	169
Genral: The Great War Game	○	○	○	○	○	169
Golf League Records	○	○	○	○	○	170
Hockey Game	○	○	○	○	○	170
Hornet: A Star-Trek Game	○	○	○	○	○	170
Master Mind for MINC BASIC or RT-11 BASIC	○	○	○	○	○	171
MM: A Mastermind Game	○	○	○	○	○	171
OSCAR: Conversational Computer	○	○	○	○	○	171
Othello	○	○	○	○	○	172
Pic-Pak: Computer Picture Collection	○	○	○	○	○	172
Seven BASIC Games	○	○	○	○	○	172
SL-11 Amusement Devices Accounting System	○	○	○	○	○	173
Space Invasion	○	○	○	○	○	173
Space War for Cursor-Addressing CRTs	○	○	○	○	○	174
Star-Trek (SPACWR)	○	○	○	○	○	174
STAR.TREK (SPACWR)	○	○	○	○	○	174
TREK: A Space Game for RSTS/E	○	○	○	○	○	174
VTAG	○	○	○	○	○	175
VTPONG: RSX-11M Task to Play Pong, Using VT52 or VT55 Terminal	○	○	○	○	○	175
Computer Operations						
Access Control	○	○	○	○	○	178
ACCLOG: Task Accounting Package for RSX-11M Version 3.0	○	○	○	○	○	178
AIM Benchmark — Suite I	○	○	○	○	○	179
ARSAP: Resource Management and Chargeback System	○	○	○	○	○	179
ASEA's DS-8/QDBC-11 Device Driver	○	○	○	○	○	180
ASSIGN: IAS Logical Name Assignment	○	○	○	○	○	181
ATS (Active Task List Scan)	○	○	○	○	○	181
Benchmark Monitor for RSX	○	○	○	○	○	181

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
CACHE-11M/PLUS	○	○	●	○	○	182
CARS (Computer Audit Retrieval System)	○	○	●	●	○	183
Clock Generator	○	○	○	○	○	183
Collection of California U.S. Forest Service Software	○	○	○	○	○	183
CONTRL	○	○	●	○	○	184
DATE	○	○	○	○	○	184
Digital Clock	○	○	○	○	○	185
Diskdoctor: Disk Recovery Service	○	○	○	○	○	185
Dynamic Systems Account Manager	○	○	○	○	○	185
DYNPRI	○	○	○	○	○	186
EVANAC — Project Accounting System	○	○	○	○	○	186
FLUTE: Floppy Disk Ownership Arbitration Utility	○	○	○	○	○	187
Grant Clock Tasks	○	○	○	○	○	188
GTSC 306A Calendar	○	○	○	○	○	188
JOBDMPI/JOBDSPI — Job Core Image Dumper	○	○	○	○	○	188
KBSET: System Start-Up for RSTS/E	○	○	○	○	○	189
KDSS (Key-to-Disk Data Entry System)	○	○	○	○	○	189
KW11-C Subroutines	○	○	○	○	○	190
LOCK	○	○	○	○	○	190
Log: A Log-In, Log-Out Utility for RT-11	○	○	○	○	○	190
MEMDISK	○	○	○	○	○	191
Memory Disk	○	○	○	○	○	191
MJCLOCK (Multijob Clock Program)	○	○	○	○	○	191
MOCS (Master Operator Control System)	○	○	○	○	○	192
Monitor Commands for Namelists Package	○	○	○	○	○	192
PET (Performance Evaluation and Tuning)	○	○	○	○	○	193
PNMS III (Peregrine's Network Management System III)	○	○	○	○	○	193
PRINT: Printer Initialization Routine for the LA120 Printer	○	○	○	○	○	194
RABBIT-1 Resource Accounting, Auditing, and Billing System	○	○	○	○	○	194
RABBIT-2	○	○	○	○	○	195
RABBIT-3 System Monitor	○	○	○	○	○	196
RABBIT-4 Security System	○	○	○	○	○	196
Resource Accounting Module	○	○	○	○	○	197
RESPOND	○	○	○	○	○	198
RPM	○	○	○	○	○	198
RPM (RSTS/E Performance Monitor and Optimization Tool)	○	○	○	○	○	199
RSTS Performance Measurement Package	○	○	○	○	○	199
RSTS/E Whittier College Package, Part II	○	○	○	○	○	200
RSX-11M-PLUS System Accounting Reports with DATATRIEVE	○	○	○	○	○	200
SENTRY-11	○	○	○	○	○	200
SIMQU (Simulated Line Printer Queue)	○	○	○	○	○	201
Sprint	○	○	○	○	○	201
SPY: RSX Accounting System	○	○	○	○	○	201
Squeezpak: Disk Compress and Optimization	○	○	○	○	○	202
SRF (System Reporting Facility)	○	○	○	○	○	202
SYZER: RT-11 System Sizer	○	○	○	○	○	203
TAM (Terminal Access Module)	○	○	○	○	○	203
TCU-300 Clock Daemon for Digital Pathways UNIBUS Clock/Timer	○	○	○	○	○	204
TCU-50 (Timing Control Unit)	○	○	○	○	○	204
TCU-50DYR Handler for RSX-11M/M-PLUS and Micro/RSX	○	○	○	○	○	205
TCUGET/TCUPUT Digital Pathways TCU-50D I/O	○	○	○	○	○	205
TSRUAP (A TSX-PLUS™ System Resources Utilization Accounting Package)	○	○	○	○	○	205
UPFINF: Get Accounting Information for IAS	○	○	○	○	○	206
UPFMOD: Modify Accounting File for IAS	○	○	○	○	○	206
USE: CPU Usage Monitor Display Facility for RSX-11M	○	○	○	○	○	207
USERMN: An Idle-Terminal Monitor for RSX-11	○	○	○	○	○	207
UTL	○	○	○	○	○	208

	P/OS	R/ST	R/SX	RT-11	ULTRIX-11	Page
VCS (Viking Control System)	o	o	●	o	o	208
VLOAD: A Program for RT-11 Extended Memory Monitor	o	o	o	●	o	209
VM	o	o	o	o	o	209
W	o	●	o	o	o	209
Whetstone Benchmarks	o	o	●	●	o	210
WUTIL	o	●	●	o	o	210
ZIPSORT-11	o	o	●	o	o	210
Construction						
AGGDISS	o	●	o	o	o	214
Builder (Homebuilders System)	o	o	o	●	o	214
Cobra	o	o	o	o	o	214
COMADS (Computer-Aided Dispatching)	o	●	o	o	o	215
Constructimate	o	●	●	●	o	215
Contractor Cost Accounting System	o	●	o	o	o	216
Contractor Management System	o	o	●	●	o	216
CPM (Critical Path Method)	o	●	●	o	o	217
Equipment Cost	o	o	●	●	o	218
Estimating System	o	o	o	●	o	218
ETAKE 2 (Estimating, Takeoff, and Pricing System)	o	o	●	o	o	219
FACS — Job Costing	o	●	o	o	o	219
ICONS (Integrated Construction System)	o	o	o	o	o	220
INTEREST (Interactive Estimating)	o	o	●	o	o	220
IV-11 Inventory Control System	o	●	o	o	o	221
Job Cost	o	●	●	o	o	221
Job Costing	o	●	o	●	o	222
PRODAT (Project Day Computation)	o	●	●	o	o	223
Purchase Order System	o	o	o	o	o	223
Series DEC	●	o	o	o	o	224
TABS (Total Application for Building Suppliers)	o	●	o	o	o	224
TSI JobCost	o	●	●	●	o	225
Data Conversion						
ADCON (A/D Conversions) Package for Use with ADV11-C and KVV11-C	o	o	o	●	o	228
ADF01/R SX Subroutine Library	o	o	●	o	o	228
ASCII to EBCDIC or EBCDIC to ASCII String Translation (FNEBCASC)	o	●	o	o	o	229
BASIC-PLUS System Dependency Flagger	o	●	●	o	o	229
BCD Magtape Conversions	o	o	●	o	o	229
BSO/Fmtcnv (Format Conversion Program)	o	o	●	o	o	230
BSO/Objcnv Format Conversion Program	o	●	●	o	o	230
CAD02C (Conversion Package for CADOL Software)	o	o	o	o	●	231
Computer Byte or Word Checker	o	o	o	●	o	231
CONPAX	o	●	●	o	o	232
Convert Tape Utility	o	●	●	o	o	232
DAICON: D/A Conversions Package for Use with AAV11-C and KVV11-C	o	o	o	●	o	233
DATA-LOCK®	o	●	●	o	o	233
DB*SCAN	o	●	o	o	o	234
DECCOD2	o	o	o	●	o	234
DECdx/R SX	o	o	●	o	o	235
DECODE3 — RT-11 SAV/LDA Files Disassembler	o	o	o	o	o	235
DECODE4: RT-11 SAV Files Disassembler	o	o	o	●	o	235
DFWFT (Discrete Fast Walsh-Fourier Transform) Subroutine	o	o	o	●	o	236
EPR (Electron Paramagnetic Resonance) Package	o	o	o	o	o	236
European MINC Package #3 — Data Acquisition	o	o	o	●	o	237
Fast Fourier Transform and Two Applications	o	o	o	●	o	237

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
FORTRAN—Callable Subroutines Package for Fast Continuous A/D on the MINC	○	○	○	●	○	238
FORTRAN/RT-11 Laboratory Extension	○	○	○	○	○	238
GENLOG: Shareable Data Logging Package	○	○	○	○	○	239
ITEX/Q	○	○	●	○	○	239
LazerCalc	○	○	○	●	○	240
MACS-11 (Media Access and Conversion System for PDP-11)	○	○	○	○	●	241
MINC-11 Data Acquisition Package for RSX-11M	○	○	○	○	●	241
Mixed-Radix Fourier Transform Program	○	○	○	○	○	242
MOLDYN (A Molecular Dynamics Package)	○	○	○	○	○	242
MTLIB (Magnetic Tape Driver Library and Utilities)	○	○	○	○	○	243
Nicolet 1090 Digital Oscilloscope Handler and Interface to PDP-11	○	○	○	○	○	244
OBJCON (General-Purpose Object Module Conversion Utility)	○	○	●	○	○	244
ORC: Object-to-MACRO Conversion	○	○	○	○	○	245
PDP-8 Cross-Assembler and Utilities for RSX-11D	○	○	○	○	○	246
PLANS: A Program to Plot Hard Copy on the Versatec Printer	○	○	○	○	○	246
POLFIT (A General Polynomial Fitting Program)	○	○	○	○	○	247
Professional Real-Time Interface Library	○	○	○	○	○	247
PRO/Laboratory Subroutine Package	○	○	○	○	○	248
PROM Programming Software	○	○	○	○	○	248
RSX-11M Datalogging System for Acurex Netpac	○	○	○	○	○	249
RSXPROM	○	○	○	○	○	249
RT-11 File Conversion Program for Absolute Loader Paper Tapes with SA ≤1000	○	○	○	○	○	249
RT-11 System Utilities MAPP, FIND, and GRAB	○	○	○	○	○	250
RT-11/FORTRAN Support for Data Acquisition and Display on a VT105	○	○	○	○	○	250
SIN-DAS (Single-User Data Acquisition System)	○	○	○	○	○	251
Single-, Double-, Triple-Precision ASCII to Decimal/Decimal to ASCII	○	○	○	○	○	251
Single-Precision Floating-Point Program for LSI-11 Without EIS and FIS Options	○	○	○	○	○	252
TAPER	○	○	○	○	○	253
UNITAP/UNIWRI	○	○	○	○	○	253
Utility Routines ASCIB, JLBITS, and CSISR	○	○	○	○	○	253
VIOS (Video Input/Output and Processing Software)	○	○	○	○	○	254
WRDBX Subroutine for Check Writing	○	○	○	○	○	254
Development Tools						
A-to-Z Integration Kit	○	○	○	○	○	256
ABC	○	○	○	○	○	256
ABSPAT (Absolute Binary Patch on RK Disk and DECTape)	○	○	○	○	○	257
ADT: A Debug Driver for RT-11 V4	○	○	○	○	○	257
Advanced Development Tool Kit	○	○	○	○	○	258
Aide-De-Camp™ Software Engineering Environment	○	○	○	○	○	258
Amsterdam Compiler Kit	○	○	○	○	○	259
APPGEN Applications Generator	○	○	○	○	○	259
ASCII Driven Menu for RSTS/E	○	○	○	○	○	260
ASM65 — Cross-Assembler for the 6502 Microprocessor	○	○	○	○	○	260
BASIC Business Package	○	○	○	○	○	260
BASIC, Pascal, PortaCalc, Kermit, and a Desk Top Calendar	○	○	○	○	○	261
BNR Utilities	○	○	○	○	○	261
BOS/AutoClerk	○	○	○	○	○	261
BSO/Assembler Microprocessor Relocating Assemblers	○	○	○	○	○	262
BSO/C Compiler	○	○	○	○	○	262
BSO/Debug Microprocessor Symbolic Debuggers	○	○	○	○	○	263
BSO/Mlib Microprocessor Program Librarian	○	○	○	○	○	263
BSO/Mlink Microprocessor Program Linker	○	○	○	○	○	264
BSO/Pascal Compiler	○	○	○	○	○	264

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
BSO/PLM Compiler	○	○	●	○	○	265
BUG: A Debugging Tool Used on Existing IAS Tasks	○	○	○	○	○	265
CAMAC Support Library for Industrial Systems	○	○	●	○	○	266
CAMIC (Computer-Aided Microprocessing)	○	○	○	○	●	266
CDOC — C Source Code Format Utility	○	○	○	○	○	267
CIT101: Routines to Drive the CIT101 and VT100 Terminals	○	○	○	○	○	267
CLIP (Command Language Interpreter)	○	●	○	○	○	268
CLUE™ (C (Source Level) Linecount Utility)	○	○	●	○	○	268
COBEX-11	○	●	○	○	○	269
CPLIB	○	○	○	○	○	269
CROSS: A Cross-Referencer for BASIC Programs	○	○	○	○	○	270
Cross-Assemblers	○	○	○	○	○	270
Csharp Realtime Toolkit	○	○	○	○	○	271
CVLILB: General-Purpose Library for RT-MACRO and FORTRAN for the Professional	○	○	○	○	○	271
CVLILB: General-Purpose RT-11 Library	○	○	○	○	○	272
Data I/O PROM Programmer Software and Utility Program	○	○	○	○	○	272
DCW Menu for RSTS/E Systems	○	○	●	○	○	272
DDT: A Symbolic Debugger for P/OS	○	○	○	○	○	273
DDT22: Virtual Debugger and Systems Package	○	○	○	○	○	273
DEBUG/RT (Debugger)	○	○	○	○	○	274
DECTalk Application Support Library	○	○	○	○	○	274
DIBOL Collection	○	○	○	○	○	275
DIBOL Subroutines	○	○	○	○	○	275
DMS-500 (Data Management Services)	○	○	○	○	○	276
DTLIB	○	○	○	○	○	276
EasyEntry Forms Management and Data Entry System	○	○	○	○	○	277
Enforcer I™	○	○	○	○	○	278
epsitool.assemble	○	○	○	○	○	278
FDT (FORTRAN Debugging Tool)	○	○	○	○	○	279
FEPCM Software Tools Kit	○	○	○	○	○	279
FILDMP: File Dump Utility and Object Module Cracker	○	○	○	○	○	280
FILETAB-D	○	○	○	○	○	280
Flexware Application Development System	○	○	○	○	○	281
Floating-Point and Math Package LSI-FPP	○	○	○	○	○	282
FODT (FORTRAN IV On-Line Debugging Tool for RSX-11)	○	○	○	○	○	282
FODT (FORTRAN IV On-Line Debugging Tool for RT-11)	○	○	○	○	○	282
FODT: FORTRAN-IV On-Line Debugging Tool for RT-11 for the Professional 300	○	○	○	○	○	282
Form Driver	○	○	○	○	○	283
FORMAT (Forms Management Transaction System), Version 5.1	○	○	○	○	○	283
FORODT: FORTRAN Debug Routine for RT-11	○	○	○	○	○	284
FORTRAN-77 and BASIC Runtime Units	○	○	○	○	○	284
FORTRAN Development Library	○	○	○	○	○	285
FORTRAN IV-PLUS and FORTRAN-77 On-Line Debugger	○	○	○	○	○	285
FPAC/DPAC Floating-Point Library	○	○	○	○	○	285
GPIB Software	○	○	○	○	○	286
GSE-11	○	○	○	○	○	286
INDENT/BASIC-PLUS-2 Programming Templates	○	○	○	○	○	287
InterUpt (ISM Universal Programming Tool)	○	○	○	○	○	287
ISIS 80 Continuous System Simulation Program	○	○	○	○	○	288
KMC11 Tools	○	○	○	○	○	289
KM.SYS — Device Driver for Konelar Extended Memory	○	○	○	○	○	289
KMV11-A Development Tools	○	○	○	○	○	290
KSAM (Keyed Sequential Access Method)	○	○	○	○	○	290
KXMLNK (Konelar Extended Memory Linker)	○	○	○	○	○	291
LASL Cornucopia #1	○	○	○	○	○	291
LIB.FOR Library Routines	○	○	○	○	○	291

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
LINK: FORTRAN-Callable Task Linking	○	○	●	○	○	292
LSI-11 Microprogramming Tools, Version 1.0	○	○	○	●	○	292
M-CUBED — Multiple Microprocessor MACRO Cross-Assembler	○	○	●	○	○	293
M6800/01/05/09 Cross-Software Packages	○	●	●	●	○	293
MACDBG-RT	○	○	○	●	○	294
MACRO-11 Input/Output Macro Subroutines Library	○	○	○	●	○	295
MACRO Library Macros for MACRO-11 Program Development and Debug	○	○	○	●	○	295
MACSYS-RT (MACRO-11 Development System Software)	○	○	○	○	○	296
M/APS (Menu/Authorization Processor System)	○	●	○	○	○	296
MathStat Library	○	●	●	○	○	297
Matrix Routines	○	○	○	●	○	297
Matrix Subroutines	○	○	○	○	○	298
MDBS III	○	○	○	○	○	298
Memory Dump	○	○	●	○	○	299
MENU-11/RSTS	○	○	●	○	○	299
THE MENU SYSTEM	○	○	○	○	●	300
MENU/E	○	○	●	○	○	300
Micro-Master Data Base Applications Generator	●	○	○	○	○	300
MICRO.BAS: 8080-Based Microcomputer Simulator	○	○	○	○	○	301
Microbench 6800 Cross-Assembly Package	○	○	●	○	○	301
Microbench 68000 Cross-Assembly Package	○	○	●	○	○	302
Microbench 6805 Cross-Assembly Package	○	○	●	○	○	303
Microbench 6809 Cross-Assembly Package	○	○	●	○	○	304
Microbench 8021/8035/8048/8748 Cross-Assembly Package	○	○	●	○	○	305
Microbench 8051 Cross-Assembly Package	○	○	●	○	○	306
Microbench 8080/8085 Cross-Assembly Package	○	○	●	○	○	307
Microbench 8086/8087/8088 Cross-Assembly Package	○	○	●	○	○	308
Microbench C Cross-Compiler for the Intel 8086/8087/8088	○	○	○	○	○	309
Microbench FORTRAN-77 Cross-Compiler for the Intel 8086/8088	○	○	●	○	○	310
Microbench Pascal Cross-Compiler for the Intel 8086/8088	○	○	●	○	○	311
Microbench Simulators for the Zilog Z80, Intel 8080, and Intel 8086	○	○	●	○	○	312
Microbench Z80 Cross-Assembly Package	○	○	●	○	○	313
Microbench Z8000 Cross-Assembly Package	○	○	●	○	○	314
MicroPower/Pascal-Micro/RSX	○	○	○	○	○	315
MicroPower/Pascal-RSX	○	○	○	○	○	315
MicroPower/Pascal-RT	○	○	○	○	○	316
Micro/RSTS FORTRAN-77 DEBUG	○	○	○	○	○	317
Micro/RSX FORTRAN-77 DEBUG	○	○	○	○	○	318
MIRA	○	○	○	○	○	319
Motorola 68000/10 Cross- and Resident Assembler	○	○	○	○	○	320
MTK-II Multi-Tasking Kernel	○	○	○	○	○	320
MUMPS-11 Library Tape	○	○	○	○	○	321
ODTV09: RT-11 Debugging Tool	○	○	○	○	○	321
Pascal-2™ Cross-Compiler to Target 68K with Concurrency Package	○	○	○	○	○	322
Pascal Formatter	○	○	○	○	○	323
Peregrine Four	○	○	○	○	○	323
PMM (Paged Memory Manager)	○	○	○	○	○	324
PRM-11 (Pascal Record Management)	○	○	○	○	○	324
PRO-RDM (Responsive Data Manager)	○	○	○	○	○	325
Prolog-1 (Programming in Logic)	○	○	○	○	○	325
PRO/Producer Tool Kit	●	○	○	○	○	326
PRO/Scientific Subroutine Package	●	○	○	○	○	327
PRO/Tool Kit	●	○	○	○	○	327
PRO/Tool Kit FORTRAN-77 DEBUG	●	○	○	○	○	328
PRO/Tool Kit Real-Time Interface Library	●	○	○	○	○	328
PRO/VENIX™ Software Development Kit	○	○	○	○	○	329
RDM (Responsive Data Manager)	○	○	○	○	○	329

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
RENUM: FORTRAN Renumbering Program	o	o	o	o	o	330
RENUM: FORTRAN Renumbering Program	o	o	o	o	o	330
RENUMB.BAS (BASIC File-Renumbering Program)	o	o	o	o	o	331
RENUM/PRENUM BASIC Renumberer	o	o	o	o	o	331
RESEQX	o	o	o	o	o	331
RQRDMA: DMA Interlock for RSX	o	o	o	o	o	332
RSTS/E File List and Scan Utilities	o	o	o	o	o	332
RSX MDE/T-11 (Microcomputer Development Environment) ...	o	o	o	o	o	333
RSXLIB	o	o	o	o	o	333
RT-11 MDE/T-11 (Microcomputer Development Environment) ...	o	o	o	o	o	334
RT-11 V2.0/MU BASIC Utilities Package	o	o	o	o	o	334
RTEM-11 (RT-11 Emulator for RT-11, Version 5.1)	o	o	o	o	o	334
RTEM-11 (RT-11 Version 5.2 Emulator for RSX)	o	o	o	o	o	335
S-TRAN™ BASIC to C Translator	o	o	o	o	o	335
Safe C Statement-Level Profiler™	o	o	o	o	o	336
SB-5 (System Builders-5)	o	o	o	o	o	337
SCAN (Single-Channel Analyzer)	o	o	o	o	o	337
SCCS (Source Code Control system)	o	o	o	o	o	338
SDP	o	o	o	o	o	338
SISINF	o	o	o	o	o	339
SNDRCV (Send/Receive File Utility)	o	o	o	o	o	339
SoffForms	o	o	o	o	o	340
SOLUTIONS DECK Design	o	o	o	o	o	340
SOLUTIONS DECK DMS	o	o	o	o	o	341
SOLUTIONS DECK Extract	o	o	o	o	o	342
SOLUTIONS DECK Master	o	o	o	o	o	343
SOLUTIONS DECK Report Writer	o	o	o	o	o	343
SOLUTIONS DECK Transaction	o	o	o	o	o	344
SourceTools™	o	o	o	o	o	345
SPECS: A Menu-Control System for RT-11	o	o	o	o	o	345
STM (Storage Manager)	o	o	o	o	o	345
SUBS (Standard Subroutine Library), Version II	o	o	o	o	o	346
SUPERDBG	o	o	o	o	o	346
SYM (Symbol Manager)	o	o	o	o	o	347
SYMBOL: Symbol Table Search Program	o	o	o	o	o	348
SYMBUG (Symbolic Debugger for Use with MACRO Programs)	o	o	o	o	o	348
System Device Handler for RM02, RM03, RP04, RP05, RP06, and RT-11 V4	o	o	o	o	o	348
Task Image Zapper and Other Goodies	o	o	o	o	o	349
TBS PDS (Pascal Development System)	o	o	o	o	o	349
TCAT/C (Test Coverage Analysis Tool)	o	o	o	o	o	350
TCFL: Terminal Control Function Library	o	o	o	o	o	351
TECO, COPY, SRD, MCR, and RNO for P/OS	o	o	o	o	o	351
TESTWARE	o	o	o	o	o	351
The Toolbox	o	o	o	o	o	352
TRACE.MAC/TR.MAC	o	o	o	o	o	352
Tracer C Debugger	o	o	o	o	o	353
TRAMP for RSX-11 and RT-11	o	o	o	o	o	353
TTLIB: VT100 Library Routines	o	o	o	o	o	354
TTLIB: VT100 Library for the Professional 300	o	o	o	o	o	354
UMDL (Universal Microprocessor Development Laboratory)	o	o	o	o	o	355
UNIFY Relational Data Base Management System	o	o	o	o	o	355
UNIX* Utility Pack	o	o	o	o	o	356
USER-11 Database Management System	o	o	o	o	o	357
User Command Linkage-Plus	o	o	o	o	o	357
User Command Linkage-Plus for the Professional 300 Series	o	o	o	o	o	358
USERBASICS	o	o	o	o	o	358
VFM (Viking Forms Manager)	o	o	o	o	o	359

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
VISUAL/menu	○	○	○	○	●	359
VRTARY (Virtual Array Access Routines for RT-11 and TSX-PLUS)	○	○	○	○	●	360
Wittenberg University Utility Package	○	●	○	○	○	360
X-TOOLS	○	○	●	○	○	361
XFORM	○	●	●	●	●	362
Distribution						
ACCDIBS (Accountant DIBS — Turnkey)	○	●	○	○	○	364
ACCDIBSAP (Accountant DIBS Accounts Payable)	○	●	○	○	○	364
ACCDIBSAR (Accountant DIBS Accounts Receivable)	○	●	○	○	○	364
ACCDIBSGL (Accountant DIBS General Ledger)	○	●	○	○	○	365
ACCDIBSIO (Accountant DIBS Inventory and Order Entry)	○	○	●	○	○	365
ACCDIBSPR (Accountant DIBS Payroll)	○	●	○	○	○	366
ACCDIBSSA (Accountant DIBS Sales Analysis)	○	●	○	○	○	366
Accountant II Inventory Control System	○	○	○	●	○	367
Accountant II Order Entry System	○	○	○	●	○	367
Accountant II Purchasing System	○	○	○	●	○	368
AIM (Automatic Inventory Management)	○	○	○	○	●	368
AIM/FOD (Accounting Information Manager for Fuel Oil Delivery)	○	○	○	○	○	368
Apparel Master™	○	○	○	○	○	369
APPGEN Inventory/Order Entry	○	○	○	○	○	369
Automatic Business Control System	○	●	○	○	○	370
CHIPS	○	●	○	○	○	371
Customer Order Processing	○	○	●	○	○	371
DACMS (Distribution and Cash Management System)	○	○	●	○	○	372
Daymark Wholesale Distribution System	○	○	●	○	○	372
DECTap Tailored Application Programs: Wholesale System	○	○	○	○	○	373
DIBS-11/UK	○	○	○	○	○	374
Distribusyst (Distribution Management System)	○	○	○	●	○	374
Distribution — Wholesale and Retail	○	○	○	○	○	375
Distribution Management System	○	○	○	○	●	375
Distribution System (Wholesale/Retail)	○	○	○	○	○	376
DOVETAIL Wholesale Distributor	○	○	○	○	○	376
DTRO BOMP (Bill of Materials Processor) System	○	○	○	○	○	377
DTRO CDMS (Comprehensive Distribution Management System)	○	○	○	○	○	377
DTRO Inventory Management System	○	○	○	○	○	378
DTRO Order Processing System	○	○	○	○	○	379
DTRO Purchasing System	○	○	○	○	○	380
Electronic Component Distribution System	○	○	○	○	○	380
Enterprise Distribution	○	○	○	○	○	381
EXDOC (Export Documentation System)	○	○	○	○	○	381
Export Package	○	○	○	○	○	382
FACS — Inventory and Order Entry	○	○	○	○	○	382
FACS — Job Order System	○	○	○	○	○	383
Freight Forwarder System	○	○	○	○	○	383
Fuel Company System	○	○	○	○	○	384
Fuel Oil Accounting/Delivery Scheduling	○	○	○	○	○	384
ICAMS (Inventory Control and Management System)	○	○	○	○	○	385
Identopick	○	○	○	○	○	385
Inventory	○	○	○	○	○	386
Inventory	○	○	○	○	○	386
Inventory Control	○	○	○	○	○	387
Inventory Control	○	○	○	○	○	388
MAXX D Accounting and Management System for the Distribution Industry	○	○	○	○	○	388
MBS ASR (Manus Business Systems Automatic Stock Replenishment)	○	○	○	○	○	389
MBS IM (Manus Business Systems Inventory Management)	○	○	○	○	○	389

	P/OS	R/S	RSX	RT-11	ULTRIX-11	Page
MBS OP (Manus Business Systems Order Processing)	o	o	o	o	o	390
MBS PO (Manus Business Systems Purchase Order Management)	o	o	o	o	o	391
MBS WD (Manus Business Systems Automotive Parts Warehouse Distributor System)	o	o	o	o	o	391
MDS-4	o	o	o	o	o	392
MODS (Manus Oil Dealer System)	o	o	o	o	o	392
Order Eleven	o	o	o	o	o	393
Order Entry and Invoicing	o	o	o	o	o	394
Order Entry System	o	o	o	o	o	395
Order Entry/Invoicing	o	o	o	o	o	395
Order Processing	o	o	o	o	o	396
Order Processing	o	o	o	o	o	396
Order Processing System	o	o	o	o	o	397
ORDERS Wholesale Distributor System	o	o	o	o	o	397
Papersoft	o	o	o	o	o	398
PENQUIN™	o	o	o	o	o	399
Perspective/700 Inventory Management	o	o	o	o	o	399
Perspective/700 Order Processing	o	o	o	o	o	400
PIC (Parts Inventory Control System)	o	o	o	o	o	401
Pioneer COMMAND Inventory Management Module	o	o	o	o	o	401
Pioneer COMMAND Purchase Order Processing Module	o	o	o	o	o	402
Pioneer COMMAND Sales Order Processing Module	o	o	o	o	o	403
PM32 Order Processing/Inventory/Sales Analysis	o	o	o	o	o	403
ProBiz™ Order Processing and Inventory Control	o	o	o	o	o	404
Production Control Systems	o	o	o	o	o	405
Purchase and Supply Control	o	o	o	o	o	406
RAM 12™	o	o	o	o	o	406
Sales Analysis	o	o	o	o	o	407
Shop Floor Control Systems	o	o	o	o	o	407
SMARTEYE Routing Controller	o	o	o	o	o	408
Soft Drink Bottler's Package	o	o	o	o	o	408
SSMS (Service Station Management System)	o	o	o	o	o	409
STRADIS	o	o	o	o	o	409
TBS Order Entry System with Inventory Control, Billing, and Sales Analysis	o	o	o	o	o	410
TOLAS	o	o	o	o	o	410
TRIMS (Tire Dealers and Retreaders Information Management System)	o	o	o	o	o	411
Warehousing Systems	o	o	o	o	o	412
Warehousing/Order Entry/Inventory/Purchasing	o	o	o	o	o	412
WDS/2 (Warehouse Distributor System)	o	o	o	o	o	413
Welding Distributor System — TIMS BASIC +, 2 + 2, and Super +	o	o	o	o	o	414
WHOLESALE-11	o	o	o	o	o	415
Wholesale/Liquid Product Inventory	o	o	o	o	o	415
Wholesaler's Software System	o	o	o	o	o	416
Wine and Beverage Distribution System	o	o	o	o	o	417
XK-11	o	o	o	o	o	418
Zip-Check	o	o	o	o	o	418
Zip-Man™	o	o	o	o	o	419
Zip-Pick™ Warehouse Automation System	o	o	o	o	o	419
Zip-Stock™	o	o	o	o	o	420
Earth Resources						
ABC/Gas	o	o	o	o	o	422
APR (Automated Production Reporting) System	o	o	o	o	o	422
ERDAS Image Processing and Geographic Information System	o	o	o	o	o	423
ES-LOG	o	o	o	o	o	424
Log and Lumber Inventory Systems	o	o	o	o	o	424

	P/OS	RSTS	RST	RT-11	ULTRIX-11	Page
OGAS (Oil and Gas Accounting System)	○	●	○	○	○	425
OMS (Oil Movement System)	○	○	●	○	○	425
Process Supervisory Control	○	○	○	○	○	426
TIP (Tankage Inventory and Yields Programs)	○	●	●	●	○	426
TMS-4 (TANO Macro System, Version 4)	○	○	●	○	○	427
Education						
ABACUS	○	○	○	○	●	430
Academic Management Systems	○	●	○	○	○	430
ARCHON: ADMISS	○	●	○	○	○	430
ARCHON: BILLS	○	●	○	○	○	431
ARCHON: STUDENT	○	○	○	○	○	431
Attendance	○	●	○	○	○	432
AVID	●	○	●	●	○	433
CADA-1983 (Computer-Assisted Data Analysis Monitor)	○	○	○	○	○	433
CAI (Computer-Assisted Instruction Package)	○	●	○	○	○	434
CAMPUS (Campus Planning Package)	○	○	○	●	○	434
CASANOVA (Computer-Assisted Instruction in Analysis of Variance)	○	●	○	○	○	435
CAST® (Computer-Assisted Self-Training)	○	○	○	○	○	435
CLASS — Education Accounts Payable A/P System	○	●	○	○	○	436
CLASS — Education Admission System	○	●	○	○	○	436
CLASS — Education Alumni/Development System	○	●	○	○	○	437
CLASS — Education Billing and Receivables System	○	●	○	○	○	437
CLASS — Education Personnel System	○	○	○	○	○	438
CLASS — Education Registration System	○	●	○	○	○	438
CLASS — Educational Financial Aid System	○	●	○	○	○	438
CLASS — Educational Financial System	○	○	○	○	○	439
CLASS — Educational Payroll System	○	●	○	○	○	439
CLASS — IMPRS	○	●	○	○	○	439
CLASS (College-Level Administrative Software System)	○	○	○	○	○	440
Compendium of (DECAL) CAI Programs	○	○	○	○	○	440
COSAP	○	●	○	○	○	441
COSAS (Comprehensive On-Line Student Accounting System)	○	●	○	○	○	441
DECAL (Digital Equipment Corporation Author Language)	○	●	○	○	○	442
Dolphin® Curricula	○	●	○	○	○	442
ENGDRIL (English Drill) Package	○	●	○	○	○	443
Engineering Science Program Exchange	○	○	●	○	○	443
FINAID	○	○	○	○	○	444
GIS® (Guidance Information System)™	○	●	○	○	○	444
Grade Book	○	○	○	○	○	445
Grade Reporting	○	●	○	○	○	445
GRADES: A Program to Facilitate the Administrative Aspect of Grading	○	●	○	○	○	446
GRADES: Course Management Program	○	○	○	○	○	446
GRADES (Grading, Recording, and Analyzing Diverse Evaluations of Students)	○	○	○	●	○	446
INRAN, OUTRAN: Computerized Question Generation #2	○	●	○	○	○	447
ISAS (Interactive Student Accounting System)	○	●	○	○	○	447
LEADS: An Interactive Data Base Management System for Education	○	○	○	○	○	448
LEADS (Local Education Agency Data System)	○	●	○	○	○	448
Logo for the Professional 300	○	○	○	○	○	449
Multi-Tester System	○	○	○	○	○	450
On-Line Registration System	○	○	○	○	○	451
Payroll	○	○	○	○	○	451
Personnel Administrator	○	○	○	○	○	451
PLANIT (Programming Language for Interactive Teaching)	○	○	○	○	○	453
Prolog	○	○	○	○	●	453

	P/OS	R/S	R/SX	RT-11	ULTRIX-11	Page
PRSN (Personnel)	o	•	o	o	o	454
QUEST, Standard MUMPS Teaching Program, and DOC	o	o	o	o	o	454
Registration	o	•	o	o	o	455
Riverdale Math Package	o	•	o	o	o	455
ROLMAN III	o	•	o	o	o	456
Scheduling	o	•	o	o	o	456
School Business Administrator	o	•	o	o	o	457
School Fiscal Accounting	o	•	o	o	o	458
School Instructional Packages	o	•	o	o	o	459
School Payroll Package	o	•	o	o	o	459
School Student Accounting Package	o	•	o	o	o	460
SCORE	o	•	o	o	o	460
SIGI (System of Interactive Guidance and Information)	o	•	o	o	o	461
SofTeach® for UCSD Pascal®	o	o	o	o	o	462
SR/SE II (Survey of Reading/Study Efficiency)	o	•	o	o	o	462
Student Administrator	o	•	o	o	o	463
Student Terminal Management System	o	•	o	o	o	464
Tutor	o	•	o	o	o	464
TUTR: BASIC Tutoring Programs	o	•	o	o	o	464
UNIX* System Tutorials	o	o	o	o	o	465
Wabash College Student Information System	o	•	o	o	o	465
Engineering						
AC Circuit Analysis Program	o	•	•	•	o	468
ANKOR	o	•	•	•	o	468
AUTO-CHEM	o	o	•	•	o	468
BASIC and FORTRAN Support Packages	o	o	•	•	o	469
BDARE: Dynamic-System Simulation in BASIC	o	•	•	•	o	469
BFTHK	o	•	•	•	o	469
BONDJT	o	•	•	•	o	470
BOUSQ (Boussinesq)	o	•	•	•	o	470
BOXCUL (Box Culvert)	o	•	•	•	o	470
BRG (Bearing Life Calculations)	o	•	•	•	o	471
C300	o	•	•	•	o	471
C301A	o	•	•	•	o	472
C301B	o	•	•	•	o	472
C302	o	•	•	•	o	473
C303	o	•	•	•	o	474
CADBIRD II	o	o	•	•	o	474
CAPS — Section Properties Program	o	•	•	•	o	475
CBUMP — Automotive Bumper Dynamic Impact	o	•	•	•	o	475
CDIG — Graphics Digitizing Program	o	•	•	•	o	476
Cephes Math Function Library	o	o	•	•	o	476
Chanel	o	•	•	•	o	477
Circuits	o	o	•	•	o	478
Civil Library	o	•	•	•	o	478
CLENS — Automotive Head Lamp Design Code	o	•	•	•	o	479
Clientrac™	o	•	•	•	o	479
CMODEL — Finite Element Model Builder	o	•	•	•	o	480
COGO (Coordinate Geometry)	o	•	•	•	o	481
Computer Guided Probe — Electronic Fault Isolation Package	o	o	•	•	•	482
CONEFR.BAS (Cone Frustrum Layout)	o	o	•	•	•	482
Cones	o	•	•	•	o	483
COORD	o	•	•	•	o	483
COSAP™ (Conversationally Oriented Statistical Analysis Package)	o	•	•	•	o	484
CPLOT — Graphics Plotter Program	o	•	•	•	o	484
CPOST — Postplotter for Finite Element Output	o	•	•	•	o	485
CRPLT	o	•	•	•	o	485

	P/O	R/S	R/S	RT-11	ULTRIX-11	Page
CSEAT — Seat Frame Analysis Code	○	●	○	○	○	486
CSM/O/P (Continuous System Modeling and Optimizing Program)	○	○	○	○	○	486
DAREP (Differential Analyzer Replacement — Portable), DARE/11	○	○	○	●	○	487
DESCTOP (Direct Executing Scientific Computation and Operating Package)	○	○	○	○	○	488
Design Graphix™	●	○	○	○	○	489
DESIRE (Direct-Executing Simulation in Real Time)	○	○	○	○	○	489
DLOAD	○	○	○	○	○	490
ECAP	○	○	○	○	○	490
ELAN-AC	○	○	○	○	○	491
ELAN-MOD (Transistor and Diode Modeling Program)	○	○	○	○	○	492
ELAN-TR (Transient Radiation)	○	○	○	○	○	492
Elbow	○	○	○	○	○	493
European MINC Package #7 — Instruments	○	○	○	○	○	493
EXP1234 (Exponential Model Fitter)	○	○	○	○	○	494
FLGTHK	○	○	○	○	○	494
FLIC	○	○	○	○	○	494
FORSIM	○	○	○	○	○	495
FPS (Fundamental Plotting Subroutines)	○	○	○	○	○	496
Functional Subroutines	○	○	○	○	○	496
Gasket	○	○	○	○	○	497
GEARW	○	○	○	○	○	497
GPUC (General-Purpose User Command Package)	○	○	○	○	○	497
Grid	○	○	○	○	○	498
GROUSE Ground Modeling System	○	○	○	○	○	498
Hammer	○	○	○	○	○	499
HBOLTS	○	○	○	○	○	499
HEC 1: Runoff Hydrographs	○	○	○	○	○	500
HEC 2: Backwater Profiles	○	○	○	○	○	500
Holes	○	○	○	○	○	501
Hoop	○	○	○	○	○	501
HSULF (Hydrogen Sulfide)	○	○	○	○	○	501
I*S*P* (Interactive Signal Processor)	○	○	○	○	○	502
I/CAP (Interactive Electronic Circuit Analysis Program)	○	○	○	○	○	503
ICLAYOUT	○	○	○	○	○	503
I/LOGIC (Interactive Logic Simulation)	○	○	○	○	○	504
ILS (Interactive Laboratory System)™	○	○	○	○	○	505
ILS/SKY	○	○	○	○	○	505
IMSL Library	○	○	○	○	○	506
ISL (Interactive Simulation Language)	○	○	○	○	○	507
IUC (Interactive Unit Commitment)	○	○	○	○	○	507
Lambert Geodetic Conversion	○	○	○	○	○	507
LDAT (Logic Design Automation Terminal)	○	○	○	○	○	508
Linwood (Linear Least-Squares Curve-Fitting Program)	○	○	○	○	○	508
Loads	○	○	○	○	○	509
M11 PIPE	○	○	○	○	○	510
MBP (Metal Building Program)	○	○	○	○	○	510
MCSIM (Monte Carlo Simulation)	○	○	○	○	○	511
MINIMOVIE.BYU	○	○	○	○	○	511
Minimumtour: Minimum Path Routines	○	○	○	○	○	512
MOFI	○	○	○	○	○	512
MOSFIT (MOS Transistor Model Parameter Extraction Package)	○	○	○	○	○	512
NDTRAN2	○	○	○	○	○	513
Network	○	○	○	○	○	514
NEUPAN (Neutral Point Analysis)	○	○	○	○	○	514
NONLIN (Nonlinear Least-Squares Curve-Fitting Program)	○	○	○	○	○	514
Offset	○	○	○	○	○	515
OLANDR	○	○	○	○	○	516

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
OPTAN (Optical Systems, Evaluation, and Analysis)	o	o	o	o	o	516
Outlet	o	o	o	o	o	516
Paris	o	o	o	o	o	517
PIPCOS	o	o	o	o	o	517
Pipeline Layout #6000	o	o	o	o	o	518
PLDATA	o	o	o	o	o	519
Project Cost Accounting System	o	o	o	o	o	519
Project Delta, Section B: Statistics	o	o	o	o	o	519
Project Delta, Sections E and F: Additional Mathematics and Teacher Assistance	o	o	o	o	o	520
PSS/2P (Power System Simulator)	o	o	o	o	o	521
PSS/O-S (Power System Simulator for Operations)	o	o	o	o	o	522
RCPULT	o	o	o	o	o	522
REAP™ (Reliability Effectiveness Analysis Program)	o	o	o	o	o	523
Receptor System 8835	o	o	o	o	o	523
Regression Analysis for Michaelis-Menten Kinetic Data	o	o	o	o	o	523
RES	o	o	o	o	o	524
REVR4	o	o	o	o	o	525
REWall (Retaining Wall Design)	o	o	o	o	o	525
RKLIN (Linear System Simulation: Runge-Kutta)	o	o	o	o	o	526
RUCAPS (Really Universal Computer-Aided Production System)	o	o	o	o	o	526
S220 CANSCAN	o	o	o	o	o	526
S235/S535 GAMMA-M	o	o	o	o	o	527
S240/S540 SPECTRAN-F	o	o	o	o	o	527
S245/S545 Quality Assurance Software	o	o	o	o	o	528
S541/S641 APOGEE	o	o	o	o	o	528
S543 NAA	o	o	o	o	o	529
SDRC® FATIGUE™	o	o	o	o	o	529
SDRC® MODAL-PLUS™	o	o	o	o	o	529
SDRC® SABBA™	o	o	o	o	o	530
Shaft: Stress Calculations	o	o	o	o	o	530
SIZEB	o	o	o	o	o	531
SIZEE	o	o	o	o	o	531
SIZEP	o	o	o	o	o	532
SIZEZ	o	o	o	o	o	533
SKYMNK Software Support	o	o	o	o	o	533
Span	o	o	o	o	o	534
SPIPE (Circular Pipe Analysis)	o	o	o	o	o	534
Square Root Routine for Integers	o	o	o	o	o	534
SSP-11 (Scientific Subroutine Package)	o	o	o	o	o	535
STAT-11: Statistical Package	o	o	o	o	o	535
STI-ANIMATION	o	o	o	o	o	535
STI-MATVAM	o	o	o	o	o	536
STONE: A Program for Resolving Mossbauer Spectra	o	o	o	o	o	536
Stress	o	o	o	o	o	536
STRESS-11: A Structural Analysis Program	o	o	o	o	o	537
STRESS (Structural Engineering Solver)	o	o	o	o	o	537
Structural Member Analysis Programs	o	o	o	o	o	538
SURVEY: Data Reduction and Plotting for Surveyor's Field Data	o	o	o	o	o	539
SVD (Singular-Value Decomposition)	o	o	o	o	o	540
TAPEIA	o	o	o	o	o	540
TELEVNT/TELSET/TELDAX: Telemetry Acquisition and Reduction	o	o	o	o	o	541
TTEST	o	o	o	o	o	541
UCSMP: A General Dynamic Modeling and Simulation Program	o	o	o	o	o	541
UDAP (Urban Drainage Analysis Package)	o	o	o	o	o	542
Ultima	o	o	o	o	o	542
USBRJT	o	o	o	o	o	543
Utility Routines for a PDP-11/45 with a Floating-Point Processor	o	o	o	o	o	543

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
VAMP (Vibration Analysis and Measurement Processor)	○	○	●	●	○	544
VANGO	○	○	●	○	○	544
Variable-Metric Routine for Function Minimization	○	○	○	○	○	545
WATDIS (Water Distribution System Analysis)	○	○	●	○	○	545
Wood Beam Check	○	○	○	●	○	546
WTCOAT	○	○	○	○	○	546
Facilities Management						
ABC/MM (Maintenance Management System)	○	○	●	○	○	548
ABC/PM Preventive Maintenance System	○	○	●	○	○	548
AnaTOLL	○	○	○	○	○	549
Athena Distributed Control System	○	○	○	○	○	549
Building/Energy Management System (Kernel) — System 600	○	○	○	○	○	550
CMMS (Comprehensive Maintenance Management System)	○	○	○	○	○	550
Duty Cycling — System 600	○	○	○	○	○	551
Fixed-Asset Control	○	○	○	○	○	551
FMS (Facility Management System)	○	○	○	○	○	551
MAINSY-IMPRS Preventive Maintenance System	○	○	○	○	○	552
Maintenance Management — System 600	○	○	○	○	○	553
Peak Demand Limiting — System 600	○	○	○	○	○	553
PMIS (Plant Management Information System)	○	○	○	○	○	553
PMST (Preventive Maintenance Scheduling and Tracking System)	○	○	○	○	○	554
ROMIS™ (Rotating Machinery Information System) Large Host	○	○	○	○	○	555
Start/Stop Time Optimization — System 600	○	○	○	○	○	556
Triton™ Security System	○	○	○	○	○	556
File Management						
ACCES Network File Management Service	○	○	○	○	●	558
ADIOS (Analog Digital Input/Output Modules)	○	○	○	○	○	558
Alphabetical Directory Sort	○	○	○	○	○	559
APL-11 V1.0 for RT-11, Plus Other Software	○	○	○	○	○	559
ARK — Magtape Archival and Backup Utility	○	○	○	○	○	560
BACK/REST	○	○	○	○	○	560
BACKUP	○	○	○	○	○	561
BACKUP	○	○	○	○	○	561
BRUCE (Backup and Restore Utility with Consolidation and Enhancement)	○	○	○	○	○	562
BUPRES: A Program that Reads Individual Files from a Backup/Device Magtape	○	○	○	○	○	562
Complete File Sort Utility	○	○	○	○	○	563
CON: A Program to Make a File Contiguous on a Files-11 Disk	○	○	○	○	○	563
COPSY	○	○	○	○	○	563
CPMRXS: CP/M® to DIGITAL Disk Translator for RSX-11M	○	○	○	○	○	564
CRAFT (Copperweld Robotics ASCII Format Translator)	○	○	○	○	○	564
CTS-300 ISAM FCG Utilities	○	○	○	○	○	564
DACSORT: FORTRAN—Callable Subroutine	○	○	○	○	○	565
DBSMNG: Small Data Base Management Package Binary Kit	○	○	○	○	○	565
DFL: A Program to Dump Physical Blocks from Floppy Disk	○	○	○	○	○	565
DIRECTORY: List Disk Directories	○	○	○	○	○	566
DISKMT, VARASC, and DOSRT: Programs for Reading and Writing Magnetic Tapes	○	○	○	○	○	566
DISKTEST	○	○	○	○	○	567
DOPTER	○	○	○	○	○	567
DPH: File Header Dump Program	○	○	○	○	○	568
DSKBLD (RSTS/E Disk-to-Disk Utility)	○	○	○	○	○	568
DSKCHK: A Program to Check Space on Disks	○	○	○	○	○	568
DSKLIB: A Disk Librarian Utility Program	○	○	○	○	○	569
DTX: A Utility for Transferring Text Files and Absolute Binary Images	○	○	○	○	○	569

	P/O	RST	RSX	RT-11	ULTRIX-11	Page
DXEBCS: Floppy Disk Utility	o	o	●	o	o	569
EDPC Utilities Package	o	●	o	o	o	570
European MINC Package #1 — Utilities	o	o	o	o	o	571
EXTMT: A General-Purpose Magnetic Tape Handler	o	o	o	●	o	571
FALCON Application for RT-11	o	o	o	●	o	572
FAST Subroutines for Performing Block I/O Under Files-11	o	o	o	o	o	572
File Management Utility, Version 2.3	o	o	●	o	o	573
File Manipulation Commands	o	o	o	●	o	573
File Transfer System	o	●	o	o	o	573
File Utility Programs for MU BASIC/RT-11	o	o	o	●	o	574
Files	o	o	●	o	o	574
FILTRA (File Transfer Program)	o	o	o	o	o	575
FORMAT: DECTape Formatter for RT-11	o	o	o	●	o	576
FSORT3	o	●	o	o	o	576
FTU (File Transfer Utility)	o	o	●	o	o	576
GETBIN: Change a Paper Tape Binary Program to an RSX-11M						
Bootstrappable Task	o	o	●	o	o	577
HEX: Hex File Editor	o	o	o	o	o	577
IRIS-MINI	o	●	o	o	o	577
ISAM Subroutines Library	o	o	o	●	o	578
ISMDDF (ISAM to DIBOL Data File Utility)	o	o	o	o	o	578
Laboratory Peripheral Device Handlers for the LSI-11	o	o	o	●	o	579
LAD/11 (Local Area Devices) for RSX	o	o	●	o	o	579
LOCATE — Multidevice File Locator	o	o	o	●	o	580
LSI-11 Audio Cassette Utility	o	o	o	o	o	580
MAGINT (Magnetic Tape Interchange Program)	o	●	o	o	o	581
MATCHMASTER™	o	o	●	o	o	581
MBOT04 Bootstrap Loader	o	o	o	o	●	582
Menu Presentation Software	o	o	o	o	●	582
Micro/RSX SORT/MERGE	o	o	●	o	o	583
MIS (Management Information System)	o	●	o	o	o	583
MTSKIN: Write on a Tape in Card Format	o	o	o	o	o	584
MTSKOUT: Read a Tape in Card Format	o	o	o	o	o	584
NANOBIT Disk Sort	o	o	o	●	o	584
One-Drive Diskette and File Copy	o	o	o	o	●	585
OS/FT (File System)	o	o	●	●	●	585
P8P11: ASCII File Transfer from PDP-8 to PDP-11	o	o	o	●	o	586
PARSE/RSX: A Flexible FORTRAN-77 Filespec Parser	o	o	o	o	o	586
PARSE/RT: A Flexible Filespec Parser for FORTRAN	o	o	o	●	o	586
PIP10	o	o	o	●	o	587
PLIBR: A Library Control Program	o	●	o	o	o	587
PRO/RTSORT™	o	o	o	●	o	588
/rdb™ (Relational Data Base Management System)	o	o	o	o	●	588
RDS EDT (RSTS Disk Structure Editor)	o	●	o	o	o	589
RECOVR: An RT-11 Directory Restore Utility	o	o	o	●	o	590
RECOVR (RSX Corrupted Disk Recovery Utility)	o	o	●	o	o	590
REVISE: A Scanner for RT-11 Device Directions	o	o	o	●	o	590
RLUTIL	o	o	●	●	o	591
RMS-11 FORTRAN-Callable Subroutines	o	o	o	o	o	591
RMSREO (RMS Indexed File Reorganization Utility)	o	●	o	o	o	591
RO.MAC MT ROLLIN File Device Driver	o	o	o	●	o	592
ROU: Receive Queue and File Scan Utility	o	o	●	o	o	592
RT-11 to UNIX* Transfer Utilities	o	o	o	o	●	592
RT-DBASE	o	●	o	o	o	593
RT-NEWUSER V2.0	o	●	o	o	o	594
RTRSX: An RT Program to Read RSX Disks	o	o	o	●	o	594
RTSORT™	o	o	o	●	o	594
SAVER	o	●	o	o	o	595

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Select	○	●	○	○	○	596
Single-Disk DOPTER	○	●	○	○	○	596
SKIPAG: File Utility to Skip Blocks/Pages	○	○	●	○	○	597
SKYPORT	○	○	○	●	○	597
SLDRV: A Memory-Resident Disk Driver for RSX-11	○	○	●	○	○	598
SLIB.BAS: Library Maintenance Program	○	○	○	○	○	598
SOLUTIONS DECK Dictionary	○	●	○	○	○	599
SORT: Fast Memory/Disc Sort/Merge for RT-11	○	○	○	●	○	599
SORT for RT-11 for the Professional 300	○	○	○	●	○	599
SORT: Generalized File Sort Utility	○	○	○	○	○	600
SORT (Singleton's Sort)	○	○	●	○	○	600
SORT: Utility ASCII Sort	○	○	●	○	○	600
SORT/MERGE	○	○	○	●	○	601
SOS: A Program for Saving Deleted Files	○	○	●	○	○	601
SPOOL: Foreground Line Printer Spooler	○	○	○	●	○	602
SPSORT (FSORT3 Emulator)	○	○	●	○	○	602
SPSORT (Sort-1-Plus Emulator)	○	○	●	○	○	602
SPSORT (SORTM/SORTG Emulator)	○	○	●	○	○	603
Super Sort	○	○	●	○	○	603
TABS	○	○	○	●	○	603
TREAD: Subroutines to Read/Write IBM Standard Label						
RECFM = FB Magnetic Tapes	○	○	●	○	○	604
UFDOPT (UFD Optimizer)	○	○	●	○	○	604
VBS (IBM to PDP-11 VBS-Format Magtape I/O Package)	○	○	○	●	○	604
VFY: RT-11 Disk-Verification Utility	○	○	○	○	●	605
VMSPIP	○	○	●	○	○	605
XREF	○	○	○	●	○	605
ZORT	○	○	○	●	○	606
Financial Management						
1040 Tax Planner	○	○	●	○	○	610
1040 Tax System	○	○	●	○	○	610
1040 Tax System	○	○	○	●	○	610
A-to-Z Supercomp-Twenty™	○	○	○	○	●	611
ABC (Automated Bank Control System)	○	○	○	○	●	612
ABC/Analyst	○	○	●	○	○	612
ABC/Financial Planning, Modeling, and Reporting System	○	○	●	○	○	613
ACCESS Financial Systems	○	○	○	○	○	614
Accounting	○	○	●	○	○	614
Administrator 4/11	○	○	○	○	●	615
AMS (Asset Management Client Reporting System)	○	○	○	○	○	615
APPGEN Professional Time Reporting	○	○	○	○	○	616
ARCHON: FRS (Financial Reporting System)	○	○	○	○	○	617
Banker's Credit Management System	○	○	○	○	○	617
Banking — General Applications	○	○	○	○	○	617
BARON: Principal, Payment, Amortization, and Interest Information	○	○	○	○	○	618
BASYS (Retail Banking System)	○	○	○	○	○	619
Business Information System	○	○	○	○	○	619
C-11 Mortgage Banking I	○	○	○	○	○	620
C-11 Report Writer	○	○	○	○	○	620
C-CALC	○	○	○	○	○	621
CALC-11/CALC-11 PLUS	○	○	○	○	○	621
Canadian Mortgage Calculation Program	○	○	○	○	○	622
Collection-Plus	○	○	○	○	○	623
Commercial Loan System	○	○	○	○	○	623
County Treasurer's Investment Management	○	○	○	○	○	624
CUSYS (Credit Union System)	○	○	○	○	○	624
Data*Model Spreadsheet Management System	○	○	○	○	○	625

	P/Os	RSTS	RSX	RT-11	ULTRIX-11	Page
DataCalc	o	•	•	•	o	625
Decision Tree	o	o	o	o	o	626
Depreciation System	o	o	•	•	o	627
DIGICALC™	o	•	o	o	o	627
FACS — Patronage Accounting	o	•	•	•	o	628
FACTS V Systems of Tire Control	o	o	•	•	o	628
FINAL	o	•	•	•	o	629
FINAL (Financial Analysis)	o	•	•	•	o	629
FINAR (Financial Analysis and Reporting System)	o	•	•	•	o	630
FINESSE	o	o	•	•	o	630
FINPRO (Financial Projection Model)	o	o	•	•	o	631
Flexware Job Costing	o	o	o	o	o	631
Forced Closed Accounts	o	o	o	•	o	632
FPS80	o	•	•	•	o	633
FTX Funds Transfer System	o	o	•	•	o	633
GBS (Genesys Banking System)	o	o	•	•	o	634
General Ledger	o	o	o	•	o	634
General Ledger, Budgeting, and Checkwriter	o	o	o	o	o	635
GENESYS	o	o	o	o	o	635
GENSIM—IMPRS Financial Simulator	o	•	•	•	o	635
Integrated Inventory Management System	o	•	•	•	o	636
InterFad™	o	o	o	o	o	637
INTFIN (Internal Financing Package)	o	•	•	•	o	638
INTRST.PKG	o	•	•	•	o	638
MAGIC*CALC	o	o	•	•	o	638
MAPS/MODEL	o	•	•	•	o	639
Money Orders System	o	o	o	o	o	639
Multiplan® Electronic Worksheet	o	o	o	o	•	639
NYPLAN	o	•	•	•	o	640
Official Checks System	o	o	o	•	o	641
On-Line Share Registration	o	•	•	•	o	641
PAX	o	o	o	•	o	642
Performance Manager	o	o	o	o	o	642
Pioneer COMMAND Fixed-Assets Module	o	•	•	•	o	643
PLANFAX Actuarial System	o	o	•	•	•	643
POM/T (Purchase Order Management/Tendering System)	o	•	•	•	o	644
PORTSIS™ Investment Management	•	o	•	•	o	644
PPBS: Budgeting/GL/AR/AP	o	•	•	•	o	645
PRO—FPS	•	o	o	o	o	645
PRO/DIGICALC	•	o	o	o	o	646
PROFILE — Integrated Banking System	o	o	o	o	o	646
Project Delta, Sections G and H: Business and Data Processing	o	•	•	•	o	647
Safe Deposit System	o	o	o	o	•	648
SATURN—CALC™ Electronic Spreadsheet	•	•	•	•	•	648
Supercomp-Twenty™	•	o	o	o	o	649
Tax Planner	o	o	•	•	o	650
TECHSCORE	o	o	o	o	o	650
TMS (Trust Management System)	o	•	•	•	o	650
ViewComp Electronic Spreadsheet	o	o	o	o	•	651
ZPLAN PLUS	o	•	•	•	o	651
Government						
CAIRS Government Document Librarian	•	•	•	•	o	654
Campaign Finance Program	o	o	o	•	o	654
Dog License System	o	•	•	•	o	655
FCI Building and Zoning System	o	•	•	•	o	655
FCI Fire System	o	•	•	•	o	656
FCI Personnel System	o	•	•	•	o	657

	P/OS	R/ST	R/SX	RT-11	ULTRIX-11	Page
FCI Police System	○	●	○	○	○	657
GIMS (Government Information Management System)	○	○	○	○	○	658
GOV-11: Governmental Management System	○	○	●	○	○	658
Government-11	○	○	○	○	○	659
Government Payroll System	○	○	○	○	○	659
MAMS (Municipal Accounting Management System)	○	○	○	○	○	660
MAP-11 (Municipal Accounts Payable)	○	○	○	○	○	660
MAR-11 (Municipal Accounts Receivable)	○	○	○	○	○	661
MGL-11 (Municipal General Ledger and Financial Reporting)	○	○	○	○	○	662
MPY-11 (Municipal Payroll)	○	○	○	○	○	662
MUNIS (Municipal Information Systems)	○	○	○	○	○	663
MUNIS/PLUS	○	○	○	○	○	664
REAS (Real Estate Appraisal System)	○	○	○	○	○	664
RECAP	○	○	○	○	○	665
Tax-11	○	○	○	○	○	666
Title System	○	○	○	○	○	666
VEH-11 (Vehicle Registration)	○	○	○	○	○	667
Vote-R (Voter Registration Package)	○	○	○	○	○	667
Voter-11	○	○	○	○	○	668
Voter Registration System	○	○	○	○	○	669
Graphics						
A-to-Z Business Graphics	○	○	○	○	○	672
ABC/GRAF	○	○	○	○	○	672
Additions to the Roger Williams College Collection	○	○	○	○	○	673
ATHENA/graph™ Presentation Business Graphics	○	○	○	○	○	673
ATHENA/slide	○	○	○	○	○	674
BCP (Barcode/Block Character Plotter)	○	○	○	○	○	674
CalComp Host Computer Basic Software (On Line/Off Line)	○	○	○	○	○	675
CALDGN (CalComp to Design File) Interface Library	○	○	○	○	○	675
CALSIF (CalComp to Standard Interchange Format) Interface Library	○	○	○	○	○	676
CCSI-PLOT®	○	○	○	○	○	676
CELLO — A Cell Organization Utility	○	○	○	○	○	677
CHART: Bar Charts	○	○	○	○	○	678
CODE (Computer-Oriented Drafting Equivalent)	○	○	○	○	○	678
Color Trend Plot — System 600	○	○	○	○	○	679
Corgraph	○	○	○	○	○	679
CPS Graphics Package	○	○	○	○	○	680
DATS	○	○	○	○	○	680
DIGLIB	○	○	○	○	○	681
DMG/FLOW	○	○	○	○	○	681
Drawing Register	○	○	○	○	○	682
DRWLIB	○	○	○	○	○	683
DUCTSYS — HVAC Ductwork and Fittings Drawing System	○	○	○	○	○	683
E Z Chart	○	○	○	○	○	684
EDIGRAF — Batch Edit for Intergraph Design Files	○	○	○	○	○	684
European MINC Package #4 — Plotters	○	○	○	○	○	685
EZ Chart	○	○	○	○	○	685
FINGRAPH	○	○	○	○	○	686
FORTRAN Graphics Support for the VT105	○	○	○	○	○	686
FORTRAN/RT-11 Plotting System for the IEEE-488 HP-9872S Plotter	○	○	○	○	○	687
GAM (Graphic Access Method)	○	○	○	○	○	687
GDL (Graphic Display Library)	○	○	○	○	○	688
Gear	○	○	○	○	○	688
GENPLT	○	○	○	○	○	689
GIGI CAI Primer	○	○	○	○	○	689

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
GIGI Software	o	•	o	o	o	689
GIGIC2: GIGI Graphics Printout on a Low-Priced C-ITOH Printer	o	o	o	•	•	690
GINO	o	•	•	•	•	691
GINTRAN (Graphics Input and Transformation)	o	o	•	•	•	691
GKS-GRAL	o	o	•	•	•	692
GKS/C	o	o	o	•	•	692
GPR (Graphics Plotting Routines)	o	o	•	•	•	693
Graph Package	o	•	•	•	•	693
GRASP: Graphics Applications Processor	•	o	o	o	•	694
HATCH — Crosshatching	o	•	•	•	•	694
HCGS	o	•	•	•	•	694
HCGS (Host Computer Graphics Software)	o	•	•	•	•	695
HIDE (Hidden Line Removal/Plotting Subprogram)	o	o	o	•	•	695
HP-7225A HP-GL Pen Plotter Library	o	o	o	•	•	696
HP-9872 Plotting Package for Use with MINCs	o	o	•	•	•	696
HPPLOT.BAS: Hewlett-Packard 7202A Graphics Plotter Programs	o	•	•	•	•	696
IAS105: VT105 FORTRAN Graphics Package for IAS	o	o	o	•	•	697
IGOR 1 (Interactive Graphic Operating Resource)	o	•	•	•	•	697
IMAGES II +	o	o	o	•	•	698
Lawrence Plotting Package for BASIC-PLUS	o	•	•	•	•	698
Line Printer Plot	o	o	•	•	•	699
LXY-11 Plotting Package	o	•	•	•	•	699
MAPS/GRAPH	o	•	•	•	•	699
MAPSS = MAGIC (Management and Analysis of Geographic Characteristics Information)	o	o	•	•	•	700
MGSP (Multiware Graphics Subroutine Package)	o	o	•	•	•	701
Micro/GVS (Genesys Videotex System)	o	•	•	•	•	701
Micro/RSTS DECgraph-11	o	•	•	•	•	702
Micro/RSX DECgraph-11	o	•	•	•	•	702
MINC-11 Utility Package, Including HILOT	o	o	•	•	•	703
MINC BASIC and RT FORTRAN Support for the HILOT DMP4 Plotter	o	o	o	•	•	704
MINC BASIC/FORTRAN Support for HIPAD Digitizers	o	o	o	•	•	704
MINC/BASIC-FORTRAN IV Support for the Tektronix 4662 Plotter	o	o	•	•	•	704
MINC/BASIC, MINC/FORTRAN Support for HILOT Plotter	o	o	•	•	•	705
MINC/BASIC, MINC/FORTRAN Support for the DP101 Plotter	o	o	•	•	•	705
PALETTE™: Computer-Aided Drafting and Design	•	•	•	•	•	705
PC4014 Terminal Emulator	•	•	•	•	•	706
Picture Book	o	•	•	•	•	707
Pie	o	•	•	•	•	707
PIPESYS — Double-Line Piping Drawing System	o	o	•	•	•	707
PLOT	o	o	•	•	•	708
PLOT-11/RSTS and PLOT-11M for RSX	o	•	•	•	•	709
PLOT-11/RT	o	o	•	•	•	709
PLOT: Digital Incremental Plotter Software Package	o	o	•	•	•	710
PLOT3D: 3-D FORTRAN Plotting Package for MINC-11/VT105/HP-9872A	o	o	o	•	•	711
PLOT50 (Vector Plotting for the LA50)	o	o	•	•	•	711
PLOT55 for RSX-11	o	o	•	•	•	712
PLOT55 for the VT125 (VT105 Emulator) Under RT-11 FORTRAN	o	o	•	•	•	712
PLOTPR.BAS:GIGI/DECwriter IV	o	•	•	•	•	713
Plotting Package for RT-11 FORTRAN	o	o	•	•	•	713
PLOTXY.BAS: GIGI/Houston Instruments DMP29R X-Y Plotter Graphics Utilities	o	•	•	•	•	713
PLXY-11M	o	o	•	•	•	714
PLXY-11M-PLUS and PLXY-11/RSTS	o	•	•	•	•	714
PLXY-11/RT	o	o	•	•	•	715
PRO/IVIS Loadable Driver and Subroutine Library	•	o	•	•	•	716

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
PRO/SIGHT	●	○	○	○	○	716
QUEST Graphical and Text Information System	○	○	○	○	●	717
RAM	○	○	●	○	○	718
Real-Time Interface Support for the Nicolet Explorer by the RS2232 ..	●	○	○	○	○	718
ReGIS CAI Primer	○	●	○	○	○	718
RGL/11	○	○	●	○	○	719
Rhintek Plot Package	○	●	●	○	○	719
Roger Williams College Collection	○	●	○	○	○	719
RSTS/E DECgraph-11	○	○	●	○	○	720
RSX-11M-PLUS DECgraph-11	○	○	●	○	○	721
RSX-11M VIGL	○	○	●	○	○	721
RSX-11/PROVUE	○	○	○	○	○	722
RT-11/FORTRAN Support for the VT105 Emulator on the VT125	○	○	○	●	○	723
SATURN-GRAPH™	●	●	●	○	○	723
SCPLT: CRT Screen Plot Program	○	○	○	○	○	724
SDM (Symbolic Drawing Machine)	○	○	●	○	○	724
Simple Line and Bar Graph Program	○	○	○	○	○	725
SIMPLEPLOT Mark 2	○	○	○	○	○	725
SIMPLEPLOT Mark 2 Section 2	○	○	○	○	○	726
SIMPLEPLOT Mark 2 Section 4	○	○	○	○	○	726
STAG II Drawing System	○	○	○	○	○	727
STRINGS (Storage and Retrieval Information Graphics)	○	○	○	○	○	728
SURFAC	○	○	○	○	○	728
Tektronix Emulator for RSX-11	○	○	○	○	○	729
TESS™ (The Extended Simulation System)	○	○	○	○	○	729
TFONT (Text Font Design Program)	○	○	○	○	○	729
VT, BD, BD011, and IOS	○	○	○	○	○	730
VT105 Graphics Package	○	○	○	○	○	731
VT125 Graphics Hard Copy on an EPSON MX-80 Serial Printer	○	○	○	○	○	731
VT55 FORTRAN-Callable Functions	○	○	○	○	○	732
Wall	○	○	○	○	○	732
Health Care						
AISCorp. Medical Management Systems	○	○	○	○	○	734
Anatomic Pathology	○	○	○	○	○	734
Apex Home Health Management System	○	○	○	○	○	735
APS (Accounts Payable System)	○	○	○	○	○	735
Automated Voucher Payment System	○	○	○	○	○	735
Bacteriology Module: Leadership Series™	○	○	○	○	○	736
Basic Image-Processing System for CAT Scans	○	○	○	○	○	737
Billing and Accounts Receivable System	○	○	○	○	○	737
Blood Bank Module: Leadership Series™	○	○	○	○	○	737
C-11 Hospital Resource Management	○	○	○	○	○	738
C-Chart System — Medical Accounting, Inventory	○	○	○	○	○	738
CAIRS Medical Librarian	○	○	○	○	○	739
CAMS (Computerized Arrhythmia Monitoring System)	○	○	○	○	○	740
CAPS	○	○	○	○	○	740
CARE/DM	○	○	○	○	○	741
CHARGER	○	○	○	○	○	742
Checker	○	○	○	○	○	742
CLIN-TEAMS® /Remote	○	○	○	○	○	743
Clini-CAL® Laboratory Information System	○	○	○	○	○	743
Clinical Data System Application Package and West Midlands RHA Blood Bank System	○	○	○	○	○	744
Clinical Support Systems: Leadership Series™	○	○	○	○	○	744
CMIS (Mental Health Management Information System)	○	○	○	○	○	745
CO-LAB	○	○	○	○	○	745
Collaborative Clinic System	○	○	○	○	○	746

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
COMPCARE (Comprehensive Care Centers)	○	●	○	○	○	746
Comprehensive Blood Bank System	○	○	○	○	○	746
COMPU-CHART — Medical Records Program for Long-Term-Care Facilities	○	●	○	○	○	747
COMPU-TRIEVE — Report Writer and Data Manager	○	●	○	○	○	747
ConTrol — Materials Management Information System	○	○	○	○	○	748
D16 and ROTA Programs for GAMMA-11	○	○	○	●	○	749
DataCare	○	●	○	○	○	749
DFM (Dental Financial Manager)	○	○	○	●	○	750
Dialysis Clinic Billing	○	●	○	○	○	750
Dietary Scheduling System	○	●	○	○	○	751
DMIS (Doctors' Medical Information System)	○	○	○	●	○	751
Doctor Billing	○	○	○	●	○	751
DOSRES (Quantal Dose-Response Analysis)	○	○	●	○	○	752
Episodic Billing System	○	●	○	○	○	752
European MINC Package #2 — Lab Management	○	○	○	●	○	753
EVOKE	○	○	○	●	○	753
GALEN — Complete Medical Office System	○	○	○	○	○	754
GLS (General Ledger System)	○	●	○	○	○	754
Group Purchasing System	○	○	○	○	○	754
HBS Nursing Home Management Information System	○	○	○	●	○	755
HDC + (Hospital Data Communication)	○	○	○	○	○	755
HDS/II (Healthcare Data Systems)	○	●	○	○	○	756
Healthcare	○	○	○	●	○	756
HIS (Hospital Information System)	○	○	○	○	○	757
Home Health Management	○	○	●	○	○	757
Hospital Accounting and Management System	○	○	○	●	○	758
Hospital Laboratory System	○	○	○	○	○	758
HTP (Hemodynamic Tracking Profile)	○	○	○	●	○	759
Independent Laboratory System	○	○	○	○	○	759
Interx™	○	○	○	○	○	760
intRlab	○	○	○	○	○	761
JSI/MIS (John Snow, Inc./Medical Information System)	○	○	○	○	●	762
LabCom + ®	○	○	○	○	○	763
Laboratory Data Management System	○	○	○	○	○	763
Laboratory Module: Leadership Series™	○	○	○	○	○	763
LABplus (Laboratory Information System)	○	○	●	○	○	764
Laundry Module: Leadership Series™	○	○	○	○	○	764
Leadership Series™ Hospital Information System	○	○	○	○	○	765
LT/AMS — Financial Management for Long-Term-Care Facilities	○	●	○	○	○	765
LT/CARE — Accounts Receivable for Long-Term-Care Facilities	○	○	○	○	○	766
LT/PRX — Payroll and Personnel Management for Long-Term-Care Facilities	○	●	○	○	○	766
MDS (Medical Data System)	○	○	○	○	○	767
MDX	○	○	○	○	○	767
Medical Billing and Accounts Receivable	○	○	○	○	○	768
Medical Laboratory System	○	○	○	○	○	768
Medical Office Manager	○	●	○	○	○	768
Medical Records System	○	○	○	○	○	769
Medication/Treatment Sheet System for Nursing Homes	○	○	○	○	●	770
MediCom®	○	○	○	○	●	770
MEDICOMS (Medical Office Receivables Management System)	○	○	●	○	○	770
MEDISYS	○	○	○	●	○	771
MEDREP — Systems for Preparation of Medicaid/Medicare Reports	○	●	○	○	○	772
MESTAMED	○	○	○	○	○	772
MINI-PHARM (Minicomputer Hospital Pharmacy Package)	○	○	○	○	○	772
MPMS (Medical Practice Management System)	○	○	○	○	●	773
MRS (Medical Records System)	○	○	○	○	○	774

	PLOS	RSTS	RSX	RT-11	ULTRIX-11	Page
Multilab — Comprehensive Clinical Laboratory Information System ..	o	o	o	o	o	774
Multipharm	o	o	o	o	o	775
NHIS (Nursing Home Information System)	o	o	o	o	o	776
PAIS (Patient Accounting and Information System)	o	●	o	o	o	776
Paramedics Billing	o	●	o	o	o	776
PAS-11/D (Professional Accounting Series-11/Dental)	o	●	o	o	o	777
PAS-11/M (Professional Accounting Series-11/Medical)	o	●	o	●	o	777
PASS (Payroll and Staffing System)	o	●	o	o	o	778
Pathology Billing	o	●	o	o	o	778
Patient Management System	o	o	o	o	o	779
Payables	o	o	o	o	o	779
Payroll	o	o	o	o	o	779
PFS (Patient Funds System)	o	●	o	o	o	780
Pharmacy	o	o	o	o	o	780
Pharmacy Module: Leadership Series™	o	o	o	o	o	781
Physician Systems	o	o	o	o	o	781
Practice Management System	o	●	o	o	o	782
Practice Management System	o	o	●	o	o	782
PRN-1 Pharmacy Package	o	●	o	o	o	783
PRO-IV Medical Management	●	●	●	o	o	783
Programs for Analyzing Stress-Strain Data from Lung Parenchyma and Artery Tests	o	o	o	●	o	784
RADIO-OSCAR	o	●	●	●	o	784
Radiology Accounts Receivable Management System	o	o	o	●	o	785
Radiology Billing	o	●	o	o	o	785
RBS (Radiology Billing System)	o	o	o	●	o	786
RxCom	o	o	o	o	o	787
RXS (Pharmacy System)	o	●	o	o	o	787
SALGLA (Salivary Gland Analysis)	o	o	o	●	o	788
SLEEP: Programs of Analysis of Sleep-Wakefulness Data	o	●	o	o	o	788
Spectrum	o	o	o	●	o	788
Sprint	o	o	o	o	o	789
Sunquest Laboratory System	o	o	o	o	o	790
Temporary Nursing Personnel Agency System	o	●	o	o	o	790
Third-Party Claim Payment and Billing System	o	o	o	o	o	791
TMR® (The Medical Record)	o	o	●	o	o	791
VET-11	o	o	o	●	o	792
Vet System/2000	o	●	o	o	o	792
VMIS (Visiting Nurse Home Health Management Information System)	o	o	o	●	o	792
VSV-01 Device Driver for RSX-11M	o	o	●	o	o	793
Wayne Medical System	o	o	●	o	o	793
Information Management						
A-to-Z Data Inquiry	o	o	●	o	o	796
ADR/DATA™	o	●	o	o	o	796
ARCHON: ADMS (Association Data Management System)	o	●	o	o	o	797
ARCHON: FUND-AL	o	●	o	o	o	797
ARCHON: QDMS (Quodata Data Management System)	o	●	o	o	o	798
ASDLOG (Automatic Searching for DIALOG Literature Search)	o	o	o	●	o	798
AUTOPRO (Automatic Programming)	o	●	o	o	o	799
Bar-Coded Systems	o	o	o	●	o	800
BASE/OE (Base Operating Environment)	●	o	●	o	o	800
BASIX	o	o	●	o	o	801
BBASE: A Small Data Base Program	●	o	●	o	o	801
CAIRS (Computer-Assisted Information Retrieval Systems)	o	●	o	o	o	801
D™	o	o	o	●	o	802
DATA BASE: A Rudimentary Data Base Generator	o	o	o	●	o	803

	P/OS	R/ST	RSX	RT-11	ULTRIX-11	Page
Data Base Management Package	o	o	o	●	o	803
Data Base Management Package, Binary Kit Only, for the Professional 300	o	o	o	●	o	803
Data Base Management Package, Source Only, for the Professional 300	o	o	o	●	o	804
Data Boss/4	o	●	o	o	o	804
DATAMAT	o	o	●	o	o	805
DATATRIEVE-11	o	●	●	o	o	805
DATATRIEVE-11/IAS	o	o	o	o	o	806
DATMAN (BASIC Data Manipulation Package)	o	o	o	●	o	807
DBMS-11	o	o	●	o	o	807
Demonstrator	o	●	o	o	o	808
DFRS (Donor Fund Raising System)	o	●	o	o	o	808
DRS	o	o	●	o	o	809
EPOS (Engineering- and Project Management-Oriented Support System)	o	o	●	o	o	810
EPS (Electronic Publishing System)	o	o	●	o	o	811
F*I*R*E Report Writer	o	o	o	●	o	812
FMS-11/IAS	o	o	o	o	o	812
FMS-11/RSTS	o	●	o	o	o	813
FORMATIX	o	●	●	o	o	814
Fundraiser	o	o	o	o	o	814
GBMS (General Business Management System)	o	o	o	●	o	815
GCIS (Group Corporate Information System)	●	●	o	o	o	815
General-Purpose Data Base Package	●	o	o	o	o	816
IMPRS	o	●	o	o	o	816
INDENT (Initial Data Entry)	o	o	●	●	o	816
INMAGIC	o	●	●	o	o	817
INVSIM (Inventory Simulation)	o	●	o	o	o	818
Job Cost Accounting	o	o	●	o	o	818
KEYWORD Information Manager	o	o	●	o	o	819
LEDGR	o	o	o	●	o	820
Leverage	o	o	o	o	o	821
MAPS/DB	o	●	o	o	o	821
Microlink	o	o	o	●	o	822
Micro/RSTS DATATRIEVE-11	o	●	o	o	o	822
Micro/RSX DATATRIEVE-11	o	o	●	o	o	823
Micro/RSX FMS-11 (Forms Management System)	o	o	o	●	o	824
Milldata	o	●	●	●	o	825
MIMER: The Software Machine	o	o	●	o	o	825
Miracle Viewdata	o	●	●	●	o	826
Mistress "Plus"	o	o	o	o	o	826
Mistress Relational Database Management System	o	o	o	o	o	827
Mistress/32	o	o	o	o	o	828
MP System	o	●	o	●	o	829
ORACLE® Relational Data Base Management System	o	o	●	o	o	829
Pack	o	●	●	●	o	830
Pioneer COMMAND System for Financial Management, Distribution, and Manufacturing	o	●	o	o	o	831
PORTACALC (AnalytiCalc): A 3-D Spreadsheet/Data Base System in VMS/BACKUP	o	●	●	o	o	831
PORTACALC XL: Floppy Version	o	o	●	o	o	832
PORTACALC/AnalytiCalc: A 3-D Spreadsheet/Data System	o	●	●	o	o	832
PRO/DATATRIEVE	●	o	o	o	o	833
PRO/RDT	●	o	o	o	o	833
ProtoCall 1000™	●	o	o	o	o	834
QUILL	o	o	o	o	o	835
RDM™ (Responsive Data Manager)	●	o	●	o	o	835

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Reliant	○	○	○	○	●	836
RETCON	○	○	○	○	●	836
Retrieval	○	○	○	○	●	837
RTFILE	●	●	●	○	○	837
SATURN-BASE®	○	●	●	○	○	838
SEED DBMS (Data Base Management System)	○	○	○	○	○	838
SPSS-11™	○	○	●	○	○	839
SPSS/PRO™	○	○	○	○	○	840
TAB — A Low-Overhead Data Management System	○	○	○	○	○	841
TELEP.BAS (Address Manipulator)	○	○	○	○	○	841
VDE (Viking Data Entry)	○	○	○	○	○	841
VDM (Viking Data Manager)	○	○	○	○	○	842
Viewmaster — Microfilm Indexing and Retrieval System	○	○	○	○	○	842
Zetar	○	○	○	○	○	843
Insurance						
Easypost Insurance Agency Management System	○	○	○	○	○	846
Group Health and Life Insurance	○	○	○	○	○	846
IIAAS (Independent Insurance Agency Accounting System)	○	○	○	○	○	847
Insurance Agency (Casualty)	○	○	○	○	○	847
Insurance Agency Package	○	○	○	○	○	848
Insurance Business System™	○	○	○	○	○	848
LIBERTY™ Agency Management System	○	○	○	○	○	849
Mutual Insurance Processing System	○	○	○	○	○	849
Property and Casualty Insurance System	○	○	○	○	○	849
TSH/CRIS — Credit Insurance Administration	○	○	○	○	○	850
TSH/Ordinary Insurance Administration	○	○	○	○	○	850
UDS IAS (Insurance Accounting System)	○	○	○	○	○	851
Language Processors						
8008.BAS and 8080.BAS	○	○	○	○	○	854
80/DS (PL/M-80) (Development System)	○	○	○	○	○	854
86/PC (PL/M-86) Compiler	○	○	○	○	○	854
AIS-PL/I Compiler	○	○	○	○	○	855
ALGEB: A Language for Algebra and Number Theory	○	○	○	○	○	856
ALGOL for RT-11	○	○	○	○	○	856
APL-11	○	○	○	○	○	857
APL-11 for RSTS/E	○	○	○	○	○	857
APL-11 for RT-11	○	○	○	○	○	858
AUTOVAX	○	○	○	○	○	858
AVL	○	○	○	○	○	859
BACOMP (Pseudocompiler for RT-11/BASIC)	○	○	○	○	○	859
BASIC-11 Extension Routines	○	○	○	○	○	860
BASIC-11/RT-11	○	○	○	○	○	861
BASIC-L	○	○	○	○	○	861
BASIC-PLUS-2 for IAS	○	○	○	○	○	862
BASIC-PLUS-2 for RSTS/E	○	○	○	○	○	862
BASIC-PLUS-2 for RSX-11M and RSX-11M-PLUS	○	○	○	○	○	863
BASTOC™ (BASIC to C)	○	○	○	○	○	864
BOS/MicroCobol	○	○	○	○	○	864
C Cross-Compiler for National Semiconductor Series 32000	○	○	○	○	○	865
C Language System (Binary Version) for the Professional 300	○	○	○	○	○	865
C Language System for RT-11 (Binary Version)	○	○	○	○	○	866
C Language System in RT-11 Format	○	○	○	○	○	866
C Language System, Second Master Release	○	○	○	○	○	867
C Language System with Native Toolkit	○	○	○	○	○	868
C Native and Cross-Compilers	○	○	○	○	○	868
C Test Suite	○	○	○	○	○	868
C68	○	○	○	○	○	869

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
CDL2 Compiler	o	o	●	o	o	870
COBOL	o	o	●	o	o	871
COBOL-81/RSTS/E	o	●	o	o	o	871
COBOL-81/RSX	o	o	●	o	o	872
COBOL-Plus	o	o	o	●	o	873
Control C Trap Handler for FORTRAN	o	o	o	●	o	873
CORAL 66	o	o	●	o	o	874
DBL (Data Business Language)	o	●	o	o	o	874
DDC/PPCL Compiler — System 600	o	o	●	o	o	875
Des BASIC (BASIC Cross-Compiler)	o	o	o	o	●	875
Des C (C Cross-Compiler)	o	o	o	o	●	876
Des Pascal (Pascal Cross-Compiler)	o	o	o	o	●	876
DIBOL ACCEPT/DISPLAY Subroutines	o	●	o	●	o	877
DIBOL String-Interpreting Subroutines	o	●	o	o	o	877
DIBOL Translator	o	o	o	●	o	877
DISASM.BAS MACRO Disassembler	o	●	o	o	o	878
DISASO: Object Module Disassembler	o	●	o	o	o	878
DSM-11 Translator	o	o	o	o	o	879
DYNAMO	o	●	●	o	o	879
EXPAND	o	o	●	o	o	880
Extension Routines for MU BASIC	o	o	o	●	o	880
Fast Fourier Transform Routine	o	o	o	o	o	880
FCP (FORTRAN Code Preprocessors)	●	o	o	o	o	881
FIXIT: BASIC Translator	o	●	o	o	o	881
FLECS (FORTRAN Language with Extended Control Structures)	o	o	o	●	o	882
FOCAL RT	o	o	o	●	o	882
FORTRAN-77 Compiler	o	o	o	o	o	883
FORTRAN-77 DEBUG/RSX, RSTS/E, IAS	o	●	o	o	o	883
FORTRAN-77/IAS	o	o	o	o	o	883
FORTRAN-77/RSTS/E	o	●	o	o	o	884
FORTRAN-77/RSX	o	o	●	o	o	885
FORTRAN-77/RT-11	o	o	o	●	o	886
FORTRAN Interface to IAS Subtasking	o	o	o	o	o	886
FORTRAN IV/IAS	o	o	o	o	o	887
FORTRAN IV/RSTS/E	o	●	o	o	o	887
FORTRAN IV/RSX	o	o	●	o	o	888
FORTRAN IV/RT-11	o	o	o	●	o	889
FORTRIX-C (FORTRAN to C Translator)	o	●	●	o	o	889
HCR/BASIC	o	o	o	o	o	890
HCR/Pascal	o	o	o	o	o	890
HOL77 Precompiler for DIGITAL's FORTRAN-77	o	o	●	o	o	891
IFTRAN Precompiler for PDP-11 FORTRAN	o	o	●	o	o	891
INDEX: FORTRAN Cross-Referencer	o	o	o	●	o	892
INDEX: FORTRAN Cross-Referencer	o	o	●	o	o	892
JMI Portable C Library	o	o	o	●	●	893
LALR (1) Parser Constructor to Translate Computer Languages	o	o	o	o	o	893
LISP for RSX-11	o	o	●	o	o	894
LISP11 for RSTS	o	●	o	o	o	894
LISP11 for RT-11	o	o	o	o	o	895
MACRO-05 MC6805 Cross-Development Tools	o	o	●	●	●	895
MACRO-09 MC6809 Cross-Development Tools	o	o	●	●	●	895
MACRO-65 6502 Cross-Development Tools	o	o	o	●	●	896
MACRO-68 MC68000/10 Cross-Development Tools	o	o	o	●	●	897
MACRO-80 8080/8085 Cross-Development Tools	o	o	●	●	●	897
MACRO-86 8086/8088 Cross-Development Tools	o	o	●	●	●	898
MACRO-8K Z-8000/1/2/3/4 Cross-Development Tools	o	o	o	●	●	898
MACRO-MC MC6800/01/02/03/08 Cross-Development Tools	o	o	●	●	●	899
MACRO Package for MACRO-11 to Assemble INTEL 8008 Code	o	o	o	●	o	900

	P/OS	R/STS	R/SX	RT-11	ULTRIX-11	Page
MACRO Package for MACRO-11 to Assemble INTEL 8080 Code	o	o	o	o		900
MACRO Package for MACRO-11 to Assemble Motorola 680X Code	o	o	o	o		900
MACRO Package for MACRO-11 to Assemble Signetics 2650 Code	o	o	o	o		901
MACRO-Z8 Z-80 Cross-Development Tools	o	o	o	o	o	901
MacroVAX	o	o	o	o		902
MACSP (MACRO-11/SP Structured Programming Macros)	o	o	o	o		902
MACSUB: RSX-11M MACRO Subroutines	o	o	o	o		903
MAGIC/L™	o	o	o	o		903
MARGOT: A MACRO-Based Generator of Command Language						
Interpreters	o	o	o	o		904
Micro Concurrent Pascal (mCP) Cross-Compiler	o	o	o	o		904
microMAGIC Microprocessor Software Development Package	o	o	o	o		905
Micro/RSTS BASIC-PLUS-2	o	o	o	o		906
Micro/RSTS COBOL-81	o	o	o	o		906
Micro/RSTS FORTRAN-77	o	o	o	o		907
Micro/RSX BASIC-PLUS-2	o	o	o	o		907
Micro/RSX COBOL-81	o	o	o	o		908
Micro/RSX DIBOL	o	o	o	o		909
Micro/RSX FORTRAN-77	o	o	o	o		909
Micro/RSX PDP-11 Pascal	o	o	o	o		910
MINC BASIC	o	o	o	o		910
Mnemonic Dump	o	o	o	o		911
Modula-2/RSX	o	o	o	o		911
MPS Cross-Assembly Programs for RT-11	o	o	o	o		912
MRMLIB	o	o	o	o		912
MU BASIC-11/RT-11	o	o	o	o		913
Objective-C	o	o	o	o		913
ODT-11T	o	o	o	o		914
PAL8XR (PDP-8/Intersil 6100 Cross-Assembler Under RT-11)	o	o	o	o		914
Pascal-2™	o	o	o	o		914
Pascal Compiler	o	o	o	o		915
Pascal Native and Cross-Compilers	o	o	o	o		915
Pascal-xii	o	o	o	o		916
Pascal/RSX	o	o	o	o		917
PDL and PDL/81 (Program Design Language)	o	o	o	o		917
PEP (Program Editor and Processor) Programming System	o	o	o	o		918
PL-11: High-Level Assembler Language	o	o	o	o		918
Poor Man's Program Design Language for RSX-11/IAS	o	o	o	o		919
PRM-11 (Pascal Record Management-11)	o	o	o	o		919
PRO-IV Applications Processor	o	o	o	o		920
PRO-IV Fourth Generation Language	o	o	o	o		920
PRO/BASIC	o	o	o	o		921
PRO/COBOL-Plus™	o	o	o	o		921
Professional Host Tool Kit	o	o	o	o		922
Professional Host Tool Kit BASIC-PLUS-2	o	o	o	o		923
Professional Host Tool Kit COBOL-81	o	o	o	o		923
Professional Host Tool Kit DIBOL	o	o	o	o		923
Professional Host Tool Kit FORTRAN-77	o	o	o	o		924
Professional Host Tool Kit FORTRAN-77 DEBUG	o	o	o	o		925
Professional Host Tool Kit Pascal	o	o	o	o		925
PRO/Tool Kit BASIC-PLUS-2	o	o	o	o		925
PRO/Tool Kit COBOL-81	o	o	o	o		926
PRO/Tool Kit DIBOL	o	o	o	o		926
PRO/Tool Kit FORTRAN-77	o	o	o	o		927
PRO/Tool Kit Pascal	o	o	o	o		928
RASM (Reverse Assemblies for RT-11)	o	o	o	o		928
RATFOR: Structured FORTRAN Preprocessor	o	o	o	o		929
ReadCOBOL™	o	o	o	o		929

	P/O	RST	RSX	RT-11	ULTRIX-11	Page
Reese BASIC	○	○	●	○	○	930
RPG II	○	○	●	○	○	930
RSTS Libraries for Swedish Pascal	○	○	●	○	○	931
RSTS MACRO Odds and Ends	○	○	●	○	○	931
RSTS/E DIBOL	○	○	○	○	○	932
RSX-11 BASIC	○	○	○	○	○	932
RSX-11 FOCAL	○	○	○	○	○	933
RSX-11M-PLUS DIBOL	○	○	○	○	○	933
RT11/03 FORTRAN Extensions	○	○	○	○	○	934
RTL/2 (Real-Time Language)	○	○	○	○	○	935
The Safe C Runtime Analyzer™	○	○	○	○	○	935
Safe C™ Interpreter	○	○	○	○	○	936
SAL-11 (Structured Assembly Language)	○	○	○	○	○	937
SAL Low-Cost Cross-Assemblers	○	○	○	○	○	937
Series IV System	○	○	○	○	○	938
SIBOL (Software Ireland Business-Oriented Language)	○	○	○	○	○	938
SOFTBOL	○	○	○	○	○	939
SPAL-11 (Structured Programming Using Assembly Language)	○	○	○	○	○	939
SpeedCOBOL™	○	○	○	○	○	939
Stage 2/RSX	○	○	○	○	○	940
Stage 2/RT-11	○	○	○	○	○	940
SUPERMAX	○	○	○	○	○	941
UCSD Pascal® Compiler	○	○	○	○	○	941
UNIFORTH	○	○	○	○	○	942
Vandata Z80 C Cross-Compiler	○	○	○	○	○	942
VLISP-11	○	○	○	○	○	943
WATBOL-11 Compiler	○	○	○	○	○	943
WATFOR-77 Compiler	○	○	○	○	○	944
XLISP: An Experimental Object-Oriented Language	○	○	○	○	○	944
Law						
C-11 Mortgage Banking II	●	●	●	●	○	946
Conflict of Interest	○	○	○	○	○	946
Docket/Calendar System	○	○	○	○	○	946
General Ledger	○	○	○	○	○	947
KRONIX-11™	○	○	○	○	○	947
KRONIX-PC™	○	○	○	○	○	948
Law Firm Management System	○	○	○	○	○	948
Legal Time and Accounting System	○	○	○	○	○	949
Legal Time and Billing System	○	○	○	○	○	949
Management Program 1000®	○	○	○	○	○	950
PICALC: Lifetime Earnings Estimation	○	○	○	○	○	951
POMS (Professional Office Management System)	○	○	○	○	○	951
Suspect-Identification System	○	○	○	○	○	952
Library Science						
CAIRS Special Librarian	●	●	●	○	○	954
GS-400 Circulation Control System	○	○	○	○	○	954
LEAP (Library Electronic Acquisition Program)	○	○	○	○	○	955
REF-11™	●	○	○	○	○	955
STACS (Serials Tracking and Control System)	○	○	○	○	○	956
ULISYS	○	○	○	○	○	957
Management						
Action List	○	○	○	○	○	960
ASA PMS (Project Management System)	○	○	○	○	○	960
CAMIS (Consultants' Accounting and Management Information System)	○	○	○	○	○	961
Casting Costing, Pricing, and Profit Analysis	○	○	○	○	○	962

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Chronometrix	○	○	○	●	○	962
DDM-11 (Due-Date Monitor)	○	○	○	○	○	963
Executive Information and Action Screen	○	○	○	○	○	963
Key Conversational Planning System	○	○	○	●	○	964
L/P (Labor Performance), MCBA, Inc.	○	○	●	○	○	964
Management Case Studies	○	○	○	○	○	965
MANEX (Manpower Expenditure Recording) ..	○	○	●	○	○	965
MAPPS (Management and Project Planning System) ..	○	○	○	○	○	966
Membership	○	○	○	○	○	967
PCM (Project Cost Model)	○	○	○	○	○	968
Phoenix-Pro™	●	○	○	○	○	968
PMM/MBS Job Cost System	○	○	○	○	○	969
Practice Management	○	○	○	○	○	970
PREMINI	○	○	○	○	○	970
Project Delta, Section C: Business	○	○	○	○	○	971
RISKAN1/RISKAN2 (Risk Analysis — General/Risk Analysis — Accounting)	○	○	○	○	○	971
SIBYL/RUNNER® Interactive Forecasting System	○	○	○	○	○	972
Time and Billing	○	○	○	○	○	973
Time Management	○	○	○	○	○	974
TOPMAN (Total Planning and Management), Version 2.0 ..	○	○	○	○	○	974
VUE	○	○	○	○	○	975
Manufacturing						
6600 Plant Management System	○	○	○	○	○	978
A-CLASS	○	○	○	○	○	978
AADC (Advanced Automated Data Collection)	○	○	○	○	○	979
ABC/Inventory System	○	○	○	○	○	979
ABCON (Automated Batch Control)	○	○	○	○	○	980
ADACS (Advanced Distributed Acquisition and Control System) ..	○	○	○	○	○	980
ADLIB	○	○	○	○	○	981
AGVS and ASRS Flexible Manufacturing Systems	○	○	○	○	○	981
AIM (Automated Industrial Monitoring)	○	○	○	○	○	981
AIM Batch (Automated Industrial Monitoring)	○	○	○	○	○	982
AIMS (Advanced Integrated Manufacturing Systems)	○	○	○	○	○	983
Allen-Bradley Translator Software	○	○	○	○	○	983
AMS (Apparel Manufacturing System)	○	○	○	○	○	984
APPS/2 (Automatic Part Programming System, Version 2)	○	○	○	○	○	984
ATOMS (Advanced Textile Operations Management Systems)	○	○	○	○	○	985
AUTO-BOP	○	○	○	○	○	985
AUTO-MET and Q-VAR	○	○	○	○	○	986
Automotive Release Accounting	○	○	○	○	○	986
AWRAP (Wire Wrapping for GD Fully Automatic Machines)	○	○	○	○	○	987
BASEWAY Software	○	○	○	○	○	987
Bill of Materials	○	○	○	○	○	988
BOMP (Bill of Material Processor), MCBA, Inc.	○	○	○	○	○	989
C-11 Materials Management	○	○	○	○	○	989
C-DASS (Computer Distribution and Storage System)	○	○	○	○	○	990
CAM-TECH	○	○	○	○	○	990
CHEM-COST	○	○	○	○	○	991
CIMCO Interactive APT (Automated Program Tools)	○	○	○	○	○	991
CFI PROFIT	○	○	○	○	○	992
CMR21 Host Utility	○	○	○	○	○	993
Concept Capacity Planning	○	○	○	○	○	993
Concept Data Base Control — Operations	○	○	○	○	○	994
Concept Data Base Control — Materials	○	○	○	○	○	995
Concept Inventory Management	○	○	○	○	○	995
Concept Material Requirements Planning	○	○	○	○	○	996

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Concept Product Costing — Materials	○	●	○	○	○	996
Concept Product Costing — Operations	○	○	○	○	○	997
Concept Purchase Order Control	○	●	○	○	○	997
Concept Works Order Control — Materials	○	●	○	○	○	997
Concept Works Order Control — Operations	○	○	●	○	○	998
COP (Customer Order Processing), MCBA, Inc.	○	○	●	●	○	998
CPCS-I (WECON Computer Process Control System)	○	○	●	○	○	999
DEctap Manufacturing System	○	○	○	○	○	1000
DNC-11 (Direct Numerical Control Package)	○	○	○	○	○	1000
DOVETAIL JOM (Job-Oriented Manufacturer)	○	○	●	○	○	1001
DOVETAIL MRP (Materials Requirement Planner)	○	○	○	●	○	1001
DPM (Dyeing Process Management)	○	○	○	○	○	1002
EQUINOX™	○	○	○	●	○	1003
FINCON (Financial Control System)	○	○	○	○	○	1004
FMRP (Full Material Requirements Planning)	○	○	○	○	○	1004
G-Post (Generalized Postprocessor)	○	○	○	○	○	1005
H-BOMM	○	○	○	○	○	1005
H-BUY	○	○	○	○	○	1006
H-MAKE	○	○	○	○	○	1007
H-MRP	○	○	○	○	○	1008
H-PLAN/M	○	○	○	○	○	1008
H-STORE	○	○	○	○	○	1009
HOST-AGV (Host-Automated Guided Vehicles)	○	○	○	○	○	1010
I/M (Inventory Management), MCBA, Inc.	○	○	○	○	○	1010
IMCS (Interactive Manufacturing Control Systems)	○	○	○	○	○	1011
IMPCON (Inventory Management and Production Control System)	○	○	○	○	○	1012
Integrated Manufacturing and Financial System, Version 4.0	○	○	○	○	○	1012
INVENT: Inventory for Manufacturing Companies	○	○	○	○	○	1013
Inventory Control	○	○	○	○	○	1014
Inventory Management	○	○	○	○	○	1014
J/C (Job Costing), MCBA, Inc.	○	○	○	○	○	1015
Job Costing	○	○	○	○	○	1015
Labor Performance	○	○	○	○	○	1016
LP (Linear Programming)	○	○	○	○	○	1016
M-Net™ (Manufacturing Network)	○	○	○	○	○	1017
Machinery Monitoring Software System	○	○	○	○	○	1017
MAESTRO	○	○	○	○	○	1018
Manufacturer Order Processing	○	○	○	○	○	1018
Manufacturing Control System	○	○	○	○	○	1019
Manufacturing Systems	○	○	○	○	○	1019
MCS-3 (Manufacturing Control System)	○	○	○	○	○	1020
MICRO LP	○	○	○	○	○	1020
MIL-Concept Production Control System	○	○	○	○	○	1021
Milltech: Melt Management System	○	○	○	○	○	1021
MINI LP	○	○	○	○	○	1022
MMS (Materials Management System)	○	○	○	○	○	1022
MMS-R Radio-Dispatched Material Management System	○	○	○	○	○	1023
MRP (Material Requirements Planning), MCBA, Inc.	○	○	○	○	○	1024
MYCRO/11 Process Management System	○	○	○	○	○	1024
NC Tape Verification for Manufacturing Operations	○	○	○	○	○	1025
NCL — Interactive Graphics Software	○	○	○	○	○	1025
NCNET	○	○	○	○	○	1026
NCTAPE (Numerical Control Tape Processing System)	○	○	○	○	○	1027
NUFORM Level I	○	○	○	○	○	1028
NUFORM Level II	○	○	○	○	○	1028
OMNICONTR® and OMNIPREP®	○	○	○	○	○	1029
Oscar	○	○	○	○	○	1029
PACKET: Bill of Materials for Manufacturing	○	○	○	○	○	1030

	P/O	RSTS	RSX	RT-11	ULTRIX-11	Page
PC/DBS (Process Control Data Base System)	o	o	●	o	o	1030
PEPS (Production Estimating and Planning System)	o	o	●	o	o	1031
Perspective/700 Bill of Materials System	o	o	●	o	o	1031
PICAM	o	o	●	o	o	1032
Pioneer COMMAND Bill of Materials Processor Module	o	o	●	o	o	1033
Pioneer COMMAND Master Production Scheduling Module	o	o	o	o	o	1033
Pioneer COMMAND Material Requirements Planning Module	o	●	o	o	o	1034
Pioneer COMMAND Production Control Module	o	o	●	o	o	1035
PMCS (Process Monitoring and Control System)	o	o	o	o	o	1035
PMS (Preventive Maintenance Scheduling System)	o	●	o	o	o	1036
P/O (Purchase Order and Receiving), MCBA, Inc.	o	●	●	o	o	1037
PRINCE (Production Information Center)	o	o	o	o	o	1037
PRO (Process-Oriented Software)	o	o	o	o	o	1038
ProBiz™ Job Costing/Work in Process	o	o	●	o	o	1039
PRODSTAR-MRP	o	o	o	o	o	1039
Purchase Order and Receiving	o	●	●	o	o	1040
Purchase Order Processing	o	o	●	o	o	1040
QMS PROGRAMS® Computer Software/Cost of Quality and Material Review	o	o	●	o	o	1041
QMS PROGRAMS® Computer Software/Customer Complaint and Field-Failure Analysis	o	o	o	o	o	1041
QMS PROGRAMS® Computer Software/Defect Analysis	o	o	●	o	o	1042
QMS PROGRAMS® Computer Software/Environment	o	o	●	o	o	1042
QMS PROGRAMS® Computer Software/Finished Goods Release	o	o	●	o	o	1043
QMS PROGRAMS® Computer Software/Instrument Calibration	o	o	o	o	o	1043
QMS PROGRAMS® Computer Software/Logistics	o	o	●	o	o	1044
QMS PROGRAMS® Computer Software/Materials	o	o	●	o	o	1044
QMS PROGRAMS® Computer Software/Optimum Inspection Strategies	o	o	●	o	o	1045
QMS PROGRAMS® Computer Software/Process Capability Studies ...	o	o	●	o	o	1045
QMS PROGRAMS® Computer Software/Product Shelf Life and Stability	o	o	●	o	o	1046
QMS PROGRAMS® Computer Software/Statistical Process Control ...	o	o	●	o	o	1046
QMS PROGRAMS® Computer Software/Supplier Ratings	o	o	●	o	o	1047
QMS PROGRAMS® Computer Software/What-If Studies	o	o	o	o	o	1047
QUOTE: Manufacturing Cost Estimating	o	●	o	o	o	1048
RCS-7	o	o	o	o	o	1048
Real-Aid	o	o	●	o	o	1049
Real-Time Production Monitoring System	o	o	o	●	o	1049
RSX-620 (IPC 620 CIM to RSX-11M/M-PLUS Communications Support Package)	o	o	●	o	o	1050
Salerno/SPM+ (Statistical Process Monitoring)	o	o	●	o	o	1050
Sales Order Processing	o	o	●	o	o	1051
SCHED: Manufacturing Scheduling System	o	o	o	o	o	1052
SCORE (Supervisory Control of Refrigeration Equipment)	o	o	o	●	o	1052
SETCON: Process Control Software for Industrial Processes	o	o	●	o	o	1053
SFC (Shop Floor Control), MCBA, Inc.	o	o	●	o	o	1053
Shop Floor Control	o	o	●	o	o	1054
Shop Floor Data Collection	o	o	●	o	o	1054
Shop Schedule and Machine Loading	o	o	o	o	o	1055
SPC (Standard Product Costing), MCBA, Inc.	o	o	●	o	o	1056
Spider II Manufacturing Planning and Control System	o	o	o	o	o	1056
SPR (Standard Product Routing), MCBA, Inc.	o	o	●	o	o	1057
Standard Product Costing	o	o	●	o	o	1058
Standard Product Routing	o	o	●	o	o	1058
TEC Manufacturing System	o	o	●	o	o	1059
TMS/2000 Tool Management System	o	o	o	o	o	1059
Tool Inventory	o	o	o	o	●	1060

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
UCC-APT (Automated Program Tools)	○	○	●	○	○	1060
UCC/CAM 100	●	○	○	○	○	1061
WWRAP (Wire Wrapping for Semiautomatic Machines)	○	●	●	●	○	1062
Media						
AdA — Advertising Agency System	○	○	●	●	○	1064
Barter	○	○	○	○	○	1064
BRLLP (Print-Out Braille Conversion Program)	○	○	○	○	○	1064
Broadcast Management	○	●	●	○	○	1065
Circulation Management	○	●	○	○	○	1065
CMS-11 (Circulation Management System)	○	○	○	○	○	1066
CMS (Cable Television Management System)	○	○	○	○	○	1066
Cybergraphic Integrated Software	○	○	○	○	○	1067
Dovetail Journal Publisher	○	○	○	○	○	1067
Duxbury Braille Translator	○	○	●	●	○	1068
FACS — Newspaper Circulation and Accounts Receivable	○	○	○	○	○	1068
KEREN	○	○	○	○	○	1069
MACROCAT	○	○	○	○	○	1070
Person System	○	○	○	○	○	1070
Sampler	○	○	○	○	○	1071
Scribe Subscription and Merchandise Fulfillment System	○	○	○	○	○	1071
Selector	○	○	○	○	○	1072
Storm Center	○	○	○	○	○	1072
Television Operations Systems	○	○	○	○	○	1073
TPINS (Times Publishing Interactive Newsprint Inventory System)	○	○	○	○	○	1073
Vista Publishing and Distribution System	○	○	○	○	○	1073
WCC CAT (Computer-Assisted Translation and Multilanguage WP System)	○	○	○	○	○	1074
Office Systems						
A-to-Z	○	○	○	○	○	1076
A-to-Z Electronic Mail	○	○	○	○	○	1076
A-to-Z Integrated System	○	○	○	○	○	1077
Abax Mailing Label System	○	○	○	○	○	1077
ALP (Address List Processor)	○	○	○	○	○	1078
BIGCAL: A Calendar Scheduling Program	○	○	○	○	○	1078
BOS/AutoIndex	○	○	○	○	○	1079
BOS/Planner	○	○	○	○	○	1079
BOS/Writer	○	○	○	○	○	1079
Bridge/86	○	○	○	○	○	1080
CALC (Accounting Calculator), Version II	○	○	○	○	○	1080
CFMS (Computerized Forms Management System)	○	○	○	○	○	1081
Cortex Desk Set™	○	○	○	○	○	1082
CPS Word Processing System	○	○	○	○	○	1082
CT*OS/IT*OS Word Processing	○	○	○	○	○	1083
Date*Book	○	○	○	○	○	1083
DECmail-11	○	○	○	○	○	1084
DECmail™-PLUS	○	○	○	○	○	1085
DECWORD/DP and DECWORD for Micro/RSTS	○	○	○	○	○	1085
Dreams	○	○	○	○	○	1086
DTC (Desk Top Calendar)	○	○	○	○	○	1087
EXECmail	○	○	○	○	○	1087
FACS (Flexible Automated Collection System)	○	○	○	○	○	1088
Graphix-11™	○	○	○	○	○	1088
IB Graph	○	○	○	○	○	1089
IND/DEV-11 (Industrial Development Management System)	○	○	○	○	○	1090
InterText™	○	○	○	○	○	1090
LABELS: The Mailing List System	○	○	○	○	○	1091
LEX-11	○	○	○	○	○	1092

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
LEXET	●	●	●	●	●	1092
Lyrix™ Word Processing System	○	○	○	○	●	1093
MAIL: Electronic Mail Package for RSTS/E	○	●	○	○	○	1093
Mail List/RSX	○	○	●	○	○	1094
Mail Package	○	●	○	○	○	1094
MAILER: Mailing List System	○	○	●	○	○	1095
Mail/Message System	○	●	○	○	○	1095
Memo	○	●	○	○	○	1096
Minimail	○	●	○	○	○	1096
NFC Mailing Module	○	●	○	○	○	1096
Office Supply/1000	○	●	○	○	○	1097
Officeman	○	●	○	○	○	1097
PER-FORM™ (Personalized Form Letters)	○	○	○	○	○	1098
Plessey-CALC	○	●	○	○	○	1098
Plessey-WP (Plessey Word Processor)	○	●	○	○	○	1098
PRO/Office Workstation	○	○	○	○	○	1099
PS (Personal Secretary)	○	●	○	○	○	1100
Q-CALL	○	○	○	○	●	1100
Q-DATE	○	○	○	○	●	1101
Q-FORM	○	○	○	○	●	1101
Q-MAIL	○	○	○	○	●	1101
Q-MATH	○	○	○	○	●	1102
Q-MENU	○	○	○	○	●	1102
Q-NOTE	○	○	○	○	●	1102
Q-OFFICE	○	○	○	○	●	1103
Q-ONE	○	○	○	○	●	1103
QM (Quick-Mail)	○	○	○	○	●	1104
RCMMAIL: Mail Merge	○	○	○	○	○	1104
REPGEN (Report Generator)	○	○	○	○	○	1104
RNI (WRDPRO-Word Processing/Text Editing)	○	●	○	○	○	1105
ROSTER	○	○	○	○	○	1105
RSTS Smart Mailer	○	○	○	○	○	1106
SCRIPTORIUM II: Word/List Processing	○	●	○	○	○	1107
SIMS (Supplies Inventory Management System)	○	○	○	○	○	1107
SoftGram Electronic Communications	○	○	○	○	○	1108
Timeman	○	●	○	○	○	1108
UniplexII Word Processor	○	○	○	○	○	1109
User-Mail	○	○	○	○	○	1109
VC	○	○	○	○	○	1110
VF	○	○	○	○	○	1110
Who's Got the File?	○	○	○	○	○	1111
Word List Processing	○	○	○	○	○	1111
XWORD	○	○	○	○	○	1111
ZCHART — Business Graphics	○	○	○	○	○	1112
Operating Systems						
Arabic PRO/Installation and Maintenance	○	○	○	○	○	1114
Array Processor Support Under UNIX*	○	○	○	○	○	1114
BOS/5 Operating System	○	○	○	○	○	1115
C EXECUTIVE, Release 2.0	○	○	○	○	○	1115
Co-Idris™ Operating System	○	○	○	○	○	1116
CP/M-86® for DIGITAL	○	○	○	○	○	1116
CTS-300	○	○	○	○	○	1117
DISKIT	○	○	○	○	○	1117
DSM-11	○	○	○	○	○	1118
Dual-Processor RT-11 System	○	○	○	○	○	1118
Everhart/Hoffing RSX Collection	○	○	○	○	○	1119
GSYS.BAS: System Management Utility	○	○	○	○	○	1119

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
H-CHAMP	○	○	○	○	●	1120
IAS (Interactive Application System)	○	○	○	○	○	1121
IAS MAIL	○	○	○	○	○	1121
Idris™ Operating System	○	○	○	○	○	1122
Lock-11	○	●	○	○	○	1122
M (MUMPS)	○	○	○	○	○	1123
M/11+	○	○	○	○	○	1123
MBOS/5 Operating System	○	○	○	○	○	1124
Micro/RSTS	○	●	○	○	○	1124
Micro/RSX	○	○	●	○	○	1125
MIIS Standard	○	○	○	○	○	1125
MIIS/MAGIC (MEDITECH Interpretive Information System)	○	○	○	○	○	1126
MONTR: A Display Program for RSTS/E	○	●	○	○	○	1127
MOS-11 (Memory-Only System)	○	○	●	○	○	1127
MRRT-11 (Memory-Resident RT-11)	○	○	○	●	○	1128
Observer	○	○	●	○	○	1128
On-Line Symbolic Region Access Utility for RSX-11/IAS	○	○	●	○	○	1129
OS/RT (Real Time O.S. Kernel)	○	○	○	○	○	1130
p-System™ Version IV.2.1	○	○	○	○	○	1130
PC-11 (Process Control Operating System)	○	○	●	○	○	1131
PC-DOS for DIGITAL	○	○	●	●	○	1131
polyFORTH II	○	○	○	○	○	1132
P/OS Diskette, Hard Disk, and Hard Disk (Arabic)	●	○	○	○	○	1132
PRO-CP/M®-80	○	○	○	○	○	1133
Professional CTS-300	○	○	○	○	○	1133
Professional Installation and Maintenance	○	○	○	○	○	1134
PRO/TSX-PLUS™	○	○	○	○	●	1134
PRO/UNIX™ Base System Kit	○	○	○	○	○	1135
RSTS-11 Library Tape 1	○	○	●	○	○	1136
RSTS-11 Library Tape 2	○	○	○	●	○	1136
RSTS System Utilities from the University of Tennessee	○	○	○	○	○	1136
RSTS/E	○	○	○	○	○	1137
RSTS/E Whittier College Package, Part I	○	○	○	○	○	1137
RSX-11 Magtape Cornucopia	○	○	○	○	○	1138
RSX-11D Software Collection	○	○	○	○	○	1139
RSX-11D System Utility Package	○	○	○	○	○	1139
RSX-11M-PLUS	○	○	○	○	○	1140
RSX-11M Real-Time Operating System	○	○	○	○	○	1140
RSX-11M/FORTRAN Enhancement Package for MINC	○	○	○	○	○	1141
RSX-11M/FORTRAN Real-Time Package for MINC	○	○	○	○	○	1142
RSX-11S Real-Time Operating System	○	○	○	○	○	1142
RT-11 on the Professional	○	○	○	○	○	1143
RT-11 Single-User Operating System	○	○	○	○	○	1143
RT-11/FORTRAN Enhancement Package for MINC (FEP)	○	○	○	○	○	1144
RT-11/FORTRAN Real-Time Package for MINC (FRP)	○	○	○	○	○	1145
RT/EMT (RT-11 Emulator)	○	○	○	○	○	1146
RTMASCOT	○	○	○	○	○	1146
RTPack	○	○	○	○	○	1147
SATT: Real-Time Operating System	○	○	○	○	○	1147
SHARE-eleven	○	○	○	○	○	1148
SHAREplus	○	○	○	○	○	1148
SNP11M for RSX-11M and RSX-11M-PLUS	○	○	○	○	○	1149
SPM-11M-PLUS (Software Performance Monitor)	○	○	○	○	○	1149
SPM-11M (Software Performance Monitor)	○	○	○	○	○	1150
STAR-eleven	○	○	○	○	○	1150
Steinmetz High School Card Reader Monitor	○	○	○	○	○	1151
SWAP: Modify Swapping/Shuffling Parameters	○	○	○	○	○	1151
TNIX Operating System — Tektronix 856x Series	○	○	○	○	○	1151

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
TSX-PLUS™	○	○	○	●	○	1152
TSXLIB: A Library Implementation of EMTs for TSX-PLUS Version 5.1	○	○	○	○	○	1153
ULTRIX-11 Operating System	○	○	○	○	●	1154
Uniq™ UNIX* System V	○	○	○	○	○	1154
UNITY Operating Systems	○	○	○	○	○	1155
USX51 8051 Operating System	○	○	○	○	○	1156
USX86 8086 Operating System	○	○	○	○	○	1156
USX96 8096 Operating System	○	○	○	○	○	1156
Virtual DECtape System for RT-11 Version 4.0	○	○	○	○	○	1157
XENIX® Operating System	○	○	○	○	○	1157
Personal Computing						
ADE/RSTS: Information Management for Office Professionals	○	●	○	○	○	1160
ADE/RSX	○	○	○	○	○	1160
Cardware Disk Subsystem	○	○	○	○	○	1161
CrossWord	○	○	○	○	○	1161
LOAD PDT	○	○	○	○	○	1162
MPS (Menu Presentation Software)	○	○	○	○	○	1162
poly-XFR™ CP/M® Communications	○	○	○	○	○	1162
The Printer's Companion	○	○	○	○	○	1163
PRO/Applications Starter Kit for Diskette or Hard Disk	○	○	○	○	○	1164
Synergy	○	○	○	○	○	1164
UltraCalc®	○	○	○	○	○	1164
Personnel						
APPGEN Payroll	○	○	○	○	○	1168
ARCHON: PAY	○	○	○	○	○	1168
ATT (Automated Time and Attendance)	○	○	○	○	○	1169
C-11 Human Resource Management	○	○	○	○	○	1169
Employment Agency	○	○	○	○	○	1170
HR&OD (Human Resource & Organization Development)	○	○	○	○	○	1170
MATCHUP: Assignment	○	○	○	○	○	1171
Payroll	○	○	○	○	○	1172
Payroll	○	○	○	○	○	1172
Payroll System	○	○	○	○	○	1172
Permanent Placement Personnel System	○	○	○	○	○	1173
Personnel Record System	○	○	○	○	○	1174
Personnel Searcher	○	○	○	○	○	1174
P/R (Payroll), MCBA, Inc.	○	○	○	○	○	1175
PRO-IV Payroll/Personnel Management	○	○	○	○	○	1175
TBS Time Accounting for Professionals	○	○	○	○	○	1176
Temporary Services Personnel System	○	○	○	○	○	1176
TIMANA-IMPRS Time-Analysis System	○	○	○	○	○	1177
TIMETRACK: Project Time Accounting	○	○	○	○	○	1177
Public Utilities						
Accounts Receivable Status	○	○	○	○	○	1180
BARCS	○	○	○	○	○	1180
BMOSS (Building Maintenance Operation Service System)	○	○	○	○	○	1181
COMIT (Communications Management Information Tool)	○	○	○	○	○	1181
Customer Service Inquiry System	○	○	○	○	○	1182
Electrical Contracting	○	○	○	○	○	1182
Electrical Repair and Paging	○	○	○	○	○	1183
EUBA (Electrical Utility Billing and Accounting)	○	○	○	○	○	1183
FMS (Fleet Management System)	○	○	○	○	○	1184
General Ledger System	○	○	○	○	○	1184
MOSTE (Management of System Telephone Expenses)	○	○	○	○	○	1185
Payroll System	○	○	○	○	○	1185

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
RCC Billing/Inventory System	o	o	o	o	●	1186
REA Accounting Software	o	o	o	o	●	1187
REACT	o	●	o	o	o	1187
Telephone Accounting and Billing System	o	o	o	o	●	1187
TelEquip	o	o	o	o	●	1188
Trouble Ticket Reporting System	o	●	o	o	o	1188
UTIANA-IMPRS Utility Analysis System	o	●	●	o	o	1189
Utility-11	o	o	o	o	●	1189
Vehicle Ledger System	o	●	o	o	o	1190
Work Order System	o	●	o	o	o	1191
Real Estate						
AESOP (Aggregate Exception System for Mortgage Portfolios)	o	●	o	o	o	1194
Apartment Management System	o	●	o	o	o	1194
C-11 Fixed Assets	o	o	●	o	o	1195
C-11 Property Manager Tracking System	o	o	o	●	o	1195
Commercial Property Management	o	●	o	o	o	1195
Commercial/Residential Property Management	o	o	●	o	o	1196
Housing Authority — Section 8	o	●	o	o	o	1196
Housing Authority Tenant Accounting	o	●	o	o	o	1197
ILSA (Installment Loan Service Accounting)	o	●	o	o	o	1197
Mortgage Loan Closing Software	o	●	o	o	o	1198
PMS (Property Management System)	o	o	o	o	o	1198
Property Management (Rental)	o	o	o	●	o	1199
Property Management System	o	o	●	o	o	1199
Real Estate Information System	●	●	●	●	●	1200
Real Information	o	o	o	●	o	1200
REALISE Real Estate Office Automation System	o	o	o	o	o	1201
Residential Property Management	o	●	o	o	o	1202
RESPAC (Real Estate Sales Data Retrieval Package)	o	●	o	o	o	1202
TSI P-M (Project Management)	o	●	o	o	o	1203
UDS PMAS (Property Management Accounting System)	o	o	o	o	o	1203
UDS Real Estate Sales Analysis	o	o	o	o	●	1204
UDS REAS (Real Estate Accounting System)	o	o	o	o	o	1204
Research						
Automated Powder Diffraction Data Collection and Analysis	●	o	o	o	o	1208
CALC: An Interactive Computer Language with Unlimited Numerical Precision	o	o	o	●	o	1208
CHROM (Chromatography Graphics and Analysis)	o	●	●	o	o	1208
CHROMPAK (Chromatography Analysis Package)	o	o	●	o	o	1209
CLIN-TEAMS®	o	o	●	o	o	1210
DATAIN	o	o	●	o	o	1210
Elliptic Integrals and Functions	o	o	o	●	o	1211
European MINC Package #5 — Data Analysis	o	o	o	o	●	1211
FEP2: A Finite Element Program for 2- and Axisymmetric 3-Dimensional Continua	o	●	●	●	o	1212
FISH: Post- and Interspike Interval Analysis	o	o	o	o	o	1212
FITPACK Curve and Surface Fitting Package	●	o	o	o	o	1212
FORTH: Programming System	o	o	o	●	o	1213
GAB (General Program for the Analysis of Biopotentials)	o	o	o	o	o	1214
Gamma Spectroscopy Applications Package	o	o	●	o	o	1214
GLIM-3	o	●	●	o	o	1215
IDL (Interactive Data Language)	o	o	o	o	o	1216
IPACS (Interactive Pattern Analysis and Classification System)	o	o	o	o	o	1216
Laboratory Applications-11 Library	o	o	o	o	o	1217
LSP-11 (Laboratory Subroutine Package)	o	o	●	o	o	1217
MICRODARE	o	o	●	o	o	1217
Minitab® Data Analysis Software	●	●	●	o	o	1218

	P/OS	R/TS	R/SX	RT-11	ULTRIX-11	Page
MLP (Maximum Likelihood Program)	○	○	●	○	○	1219
NAG FORTRAN Library Service	○	○	○	●	○	1219
Nal Data Reduction	○	○	○	○	●	1220
Neutron Activation Analysis	○	○	○	●	○	1220
NORTON (Astronomical Ephemeris Program Package)	○	○	○	○	○	1221
OSS (Optimal Sampling Schedule Designs)	○	○	○	○	●	1221
PEAK-11/M	○	○	○	○	○	1222
PSYCHROM: A Calculating Psychrometric Properties Program	○	○	○	○	●	1222
QBLIB (CAMAC Subroutine Library)	○	○	○	○	●	1222
QUADPACK	○	○	○	○	○	1223
RS/1™	●	○	○	○	○	1224
S531A/S631A ABACOS II	○	○	○	○	○	1224
SDP-PLUS (Structure Determination Package)	○	○	○	○	○	1225
SDP (Seismic Data Processing)	○	○	○	○	○	1225
SPON (Spontaneous Activity of Neuronal Spikes)	○	○	○	○	○	1226
TEAMS® -TOX	○	○	○	○	○	1226

Sales and Marketing

AAAMIS (Advertising Agency's Accounting and Management Information System)	○	○	○	○	●	1230
C-11 Sales Order Processing	●	○	○	○	○	1230
Call Tracker	○	○	○	○	○	1231
Cost Estimating	○	○	○	○	○	1232
CP-11 Coupon Redemption System	○	○	○	○	○	1232
Direct Marketing and Mail Order Management System	○	○	○	○	○	1233
DTRO Forecasting System	○	○	○	○	○	1233
Flexware Sales Analysis	○	○	○	○	○	1234
FUTURETECH — Mail Order Processing System	○	○	○	○	○	1235
Impact	○	○	○	○	○	1235
Marketab®	○	○	○	○	○	1236
Marketing Strategy Simulation for Minicomputers	○	○	○	○	○	1236
MBS SA (Manus Business Systems Sales Analysis)	○	○	○	○	○	1237
NMI Customer Profile Package	○	○	○	○	○	1237
Order Entry Processing	○	○	○	○	○	1238
Order Processing for Mailing List Rental	○	○	○	○	○	1238
Perspective/700 Sales Analysis	○	○	○	○	○	1239
PRO-IV Sales Analysis	○	○	○	○	○	1239
PROS (Prospect, Letter, and Sales Facility)	○	○	○	○	○	1240
S/A (Sales Analysis)	○	○	○	○	○	1241
Sales Analysis	○	○	○	○	○	1241
Sales Lead Analysis	○	○	○	○	○	1242
Sales Management and Mailing List	○	○	○	○	○	1242
Sales Prospect Data Base	○	○	○	○	○	1243
SEARCH/PURGE — Mailing List Deduplication Program	○	○	○	○	○	1243
Wholesale Lumber Management	○	○	○	○	○	1244

Service Industries

Abax Rental Management System	○	○	○	○	○	1246
ABC/Equipment Data and Repair History System	○	○	○	○	○	1246
CHRIS (CISCO Hotel and Resort Information Systems)	○	○	○	○	○	1247
COLOR (Color Consultants Information System)	○	○	○	○	○	1247
Court Club Management System	○	○	○	○	○	1248
Culinary Operations Information System	○	○	○	○	○	1248
Dispatch	○	○	○	○	○	1248
HIMS (Hospitality Information Management System)	○	○	○	○	○	1249
Hospitality Management System	○	○	○	○	○	1249
Innkeepers Management System	○	○	○	○	○	1250
Job Shop Management	○	○	○	○	○	1251
Oil Burner Service/Inventory	○	○	○	○	○	1252

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
PCO (Pest Control Operators Management System)	o	o	●	●	o	1252
PICS (Parts Inventory Control System)	o	o	●	●	o	1253
Rental Service System	o	●	●	o	o	1253
Resort Property Management	o	o	o	●	o	1253
RIM (Relationship Impact Model)	o	o	●	o	o	1254
Timeshare Contract Management System	o	●	●	o	o	1255
Travel System 4/11	o	●	●	o	o	1256
Vehicle Cost and PM	o	o	o	o	o	1256
Work Order Record System	●	o	o	o	o	1257
Systems Communications						
3277 Display Emulator for RSTS/E	o	●	●	o	o	1260
3780 COMBOARD™	o	●	●	o	o	1260
A-to-Z Document Transfer (DECdx)	o	o	o	o	o	1261
ACCES Network Virtual Terminal Service	o	o	o	●	o	1261
ACCES NPP (Network Protocol Package)	o	o	o	o	●	1261
Access/BSC 3270	o	●	●	●	●	1262
Access/DIA	o	●	●	●	●	1263
Access/SNA 3270	o	●	●	●	●	1264
Access/SNA 3770	o	●	●	●	●	1264
Access/SNA 5250	o	●	●	●	●	1265
Access/SNA APPC	o	●	●	●	●	1265
ACCULINK™	o	●	●	o	o	1266
Any Databridge	o	o	o	o	o	1266
Any Master Network	o	o	o	o	o	1267
AutoTELEX	o	●	●	o	o	1268
BFX (Bulk File Transfer)	o	o	o	o	o	1268
BLAST® (Blocked Asynchronous Transmission)	o	o	●	●	o	1269
BMUX: A Protocol Converter Program	o	o	o	●	o	1269
BSC/DV (Binary Synchronous Communications Support)	o	●	o	o	o	1270
BSO/Com-1	o	o	o	o	o	1270
BSO/TekId Tektronix Emulator Loading Program	o	●	●	●	o	1270
BT-II Voice Response Peripheral	o	●	●	●	o	1271
BURCOM (DIGITAL/Burroughs Communication System)	●	●	●	o	o	1271
CALOUT	o	●	●	o	o	1272
CALOUT/CONTRL	o	●	o	o	o	1272
CB-User Communication Utility	o	●	o	o	o	1273
CD: An RT-11 Device Driver for the DR-11W	o	o	o	●	o	1273
CDDRV (Cached Pseudo Disk CD)	o	o	●	o	o	1274
CDPACK: Interface Routines for DR-11W	o	o	o	●	o	1274
CMR11/CMV11 Software Driver	o	o	●	o	o	1274
COM: An RT/VMS Communications Package	o	o	o	●	o	1275
ComLINK: Remote Communications Enhancement	o	o	o	o	●	1275
COMM IOP-DUP	o	o	●	o	o	1276
COMM IOP-DZ	o	o	●	o	o	1277
Converter-22	o	o	●	o	o	1278
CTS-11 Software Driver for RSX-11M	o	o	●	o	o	1278
CTS-300 RDCP (2780/3780)	o	o	o	o	o	1279
CUX: A Virtual Terminal Program	o	o	o	o	o	1279
Data Entry Interface to Remote Hand-Held Computer	o	●	o	o	o	1280
DECdataway Intelligent Subsystem	o	o	●	o	o	1280
DECdx/RSTS	o	●	o	o	o	1280
DECnet-11M-PLUS: RSX-11M-PLUS Network Software	o	o	●	o	o	1281
DECnet-11M: RSX-11M Network Software	o	o	●	o	o	1282
DECnet-11S: RSX-11S Network Software	o	o	●	o	o	1283
DECnet-IAS	o	o	o	o	o	1284
DECnet-Micro/RSX	o	o	●	o	o	1284
DECnet Router Server	o	o	●	o	o	1285

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
DECnet-RT	○	○	○	●	○	1286
DECnet/E	○	●	○	○	○	1287
DECnet/SNA RSX 3270 Terminal Emulator	○	○	○	○	○	1287
DECnet/SNA RSX Application Interface	○	○	●	○	○	1288
DECnet/SNA RSX Remote Job Entry	○	○	○	○	○	1289
DIALBACK	○	○	○	○	○	1289
DIALUP	○	○	○	○	○	1290
DIBOL Communications Package	○	○	○	○	○	1291
DID-X.25	○	○	○	○	○	1291
DIGICOMM-11	○	○	○	○	○	1291
DIGIPORT	○	○	○	○	○	1292
DMG/NET	○	○	○	○	○	1293
DN-11 Device Driver for RSX-11	○	○	○	○	○	1293
DN-11 Driver for RSTS/E Version 7.0	○	○	○	○	○	1294
DPM (Distributed Plant Management)	○	○	○	○	○	1294
DPM-PLUS (Distributed Plant Management)	○	○	○	○	○	1295
DR11-A/C Loadable Driver with Build Package	○	○	○	○	○	1296
DRU11-C RSX-11 Driver	○	○	○	○	○	1296
DRX11-C/RSX Driver	○	○	○	○	○	1297
DT07-11M/M-PLUS	○	○	○	○	○	1297
DUPLEX — Serial Communication Between Computers	○	○	○	○	○	1298
DV11/3271 Driver for RSX-11M V3.0	○	○	○	○	○	1298
DX/11M	○	○	○	○	○	1299
DX/RSTS	○	○	○	○	○	1299
Ethernet Terminal Server	○	○	○	○	○	1300
ETHERWAY™	○	○	○	○	○	1301
European MINC Package #6 — Communication	○	○	○	○	○	1301
EXFILE (Exchange File Program)	○	○	○	○	○	1302
EXOS 8031 (Excelan Open Architecture Systems)	○	○	○	○	○	1302
EXOS 8032 (Excelan Open Architecture Systems)	○	○	○	○	○	1303
FTALK	○	○	○	○	○	1303
FTP (TCP/IP File Transfer Program)	○	○	○	○	○	1304
FUSION™	○	○	○	○	○	1304
GOULD/DEC Data Link	○	○	○	○	○	1305
GVS/File	○	○	○	○	○	1306
HASP	○	○	○	○	○	1306
HASP COMBOARD™	○	○	○	○	○	1307
HASP + RSX-11M/RSX-11M-PLUS Interconnect Software	○	○	○	○	○	1307
HASP + RT-11 and TSX-PLUS Interconnect Software	○	○	○	○	○	1308
HP.SYS: Hewlett-Packard 7470A Plotter Handler	○	○	○	○	○	1308
IAS/2780 Protocol Emulator	○	○	○	○	○	1309
IBM 2780/3780	○	○	○	○	○	1310
IBM 3270	○	○	○	○	○	1310
IBM HASP	○	○	○	○	○	1310
IBM-SDLC/HDLC-UNC	○	○	○	○	○	1311
IBMmvs/DECnet Gateway	○	○	○	○	○	1311
IBV-11A FORTRAN Support Package	○	○	○	○	○	1312
IEC11-M	○	○	○	○	○	1312
IEX-RSX-Driver	○	○	○	○	○	1313
IEX-RT-Handler	○	○	○	○	○	1313
IF-11/3780	○	○	○	○	○	1314
IF-11/HDLC-X.25 Link-Level Software	○	○	○	○	○	1314
IF-11/X.25 Packet-Switched Network Firmware	○	○	○	○	○	1315
IF-11/X.25 PLUS PAD Software and Firmware	○	○	○	○	○	1315
Instrument Bus Subroutines	○	○	○	○	○	1316
Intercomputer File Transfer Program	○	○	○	○	○	1316
IP11 Industrial I/O Subsystem Software Driver	○	○	○	○	○	1316
IXV-11/RSX Driver	○	○	○	○	○	1317

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
KB Handler	o	o	o	o	o	1317
Kermit-11	o	o	o	o	o	1318
Kermit and CPMUG Grab Bag	o	o	o	o	o	1318
KMS11 RSX X.25 LAPB Link-Level Software	o	o	o	o	o	1319
KMV11-A HDLC Framing Software	o	o	o	o	o	1319
KMV11 RSX X.25 LAPB Link-Level Software	o	o	o	o	o	1320
KXT11-CA Peripheral Processor Tool Kit/RSX	o	o	o	o	o	1320
KXT11-CA Peripheral Processor Tool Kit/RT-11	o	o	o	o	o	1321
LA.SYS	o	o	o	o	o	1321
LAT-11	o	o	o	o	o	1322
LG.SYS: Centronics 739 Serial Printer Handler	o	o	o	o	o	1322
LOGOUT: RSX-11 Remote Terminal Logout	o	o	o	o	o	1323
LSI-X.25 Front End Processor	o	o	o	o	o	1323
LSTERM: Virtual Terminal Program	o	o	o	o	o	1323
MADRV (Memory-Assisted Disk MA)	o	o	o	o	o	1324
Micro/RSX 2780/3780 Emulator	o	o	o	o	o	1324
Micro/RSX 3271 Protocol Emulator	o	o	o	o	o	1324
MINC BASIC/FORTRAN: Support for the Nicolet Explorer	o	o	o	o	o	1325
MINC RT-11/FORTRAN Support for the Nicolet Explorer Via DLV11-J Serial Line	o	o	o	o	o	1325
MINC/FORTRAN Support for MNCKW, VT100, DLV11-J	o	o	o	o	o	1326
MIOS-11/RSX Driver	o	o	o	o	o	1326
MODLNK	o	o	o	o	o	1326
Multiuser DTR	o	o	o	o	o	1327
MUX200/RSX-1AS Multiterminal Emulator	o	o	o	o	o	1327
NETEX (Network Executive)	o	o	o	o	o	1328
NEXUS Communications Software	o	o	o	o	o	1328
OS/NET (Local Area Networking)	o	o	o	o	o	1329
PB: Device Handler for Data I/O System 19 Prom Programmer	o	o	o	o	o	1329
PC-102	o	o	o	o	o	1330
PC4010	o	o	o	o	o	1330
PCL-11M	o	o	o	o	o	1331
PLC (Programmable Logic Controller) Device	o	o	o	o	o	1331
PLMAC: A Write-Only Device Handler for the IEEE-488 Interface 11-482	o	o	o	o	o	1332
poly-COM™	o	o	o	o	o	1332
PRO-2780/3780 Communications Applications	o	o	o	o	o	1333
PRO/Associate	o	o	o	o	o	1334
PRO/Communications for Diskette or Hard Disk	o	o	o	o	o	1335
PRO/DECnet	o	o	o	o	o	1335
Professional Host Communications	o	o	o	o	o	1336
PROM/RT-11	o	o	o	o	o	1337
PRO/NAPLPS	o	o	o	o	o	1337
PRO/SNA Communications	o	o	o	o	o	1338
Q-NET — Interface to DECnet	o	o	o	o	o	1339
RDDRV: Virtual RAM Disk Driver	o	o	o	o	o	1339
RJE (Remote Job Entry)	o	o	o	o	o	1340
RSTS/E-2780	o	o	o	o	o	1340
RSTS/E High-Performance 2780/3780 Emulator	o	o	o	o	o	1341
RSX-11 2780/3780 Emulator	o	o	o	o	o	1341
RSX-11 PSIM (Packetnet System Interface)	o	o	o	o	o	1342
RSX-11 PSIM-PLUS (Packetnet System Interface)	o	o	o	o	o	1342
RSX-11 TSU05 Device Driver	o	o	o	o	o	1343
RSX-11/3271 Protocol Emulator	o	o	o	o	o	1343
RSX-11M/IAS RJE/HASP	o	o	o	o	o	1344
RSX-11M/M-PLUS RJE/HASP	o	o	o	o	o	1344
RSX-11M/SNA Protocol Emulator	o	o	o	o	o	1345
RSX DLX-11	o	o	o	o	o	1345

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
RT-11 2780/3780 Protocol Emulator	○	○	○	●	○	1346
SBC-11/21 Downloader	○	○	○	○	●	1347
SP (Serial Port I/O Handler)	○	○	○	○	●	1347
SPEAKR: Vented-Box Speaker Enclosure Calculator	○	○	●	○	○	1348
SRPRDR (Serial Protocol Driver)	○	○	○	○	●	1348
TA.MAC: Very Friendly Serial Device Handler	○	○	○	○	●	1348
TANGO	○	○	○	○	●	1349
TC (Total Communicator)	○	○	○	○	○	1349
TDDRIV (TDC 2000 Driver)	○	○	○	○	●	1350
Tektronix 8001/8002/8550 Communication Package	○	○	●	○	○	1350
TEM (Terminal Emulator for RSX-11)	○	○	○	○	○	1351
TEMPRO	○	○	○	○	○	1351
Tenny Electronic Bulletin Board Message Mailing Facility	○	○	○	○	○	1351
TERM.FOR: Smart Terminal Program for MINC	○	○	○	○	○	1352
TSTE (Time-Share Terminal Emulator)	○	○	○	○	○	1352
TYCHO/HASP	○	○	○	○	○	1352
UAP-LINK	○	○	○	○	○	1353
UN1004/RSX	○	○	○	○	○	1354
UNIVAC NTR	○	○	○	○	○	1354
UNIVAC UTS400	○	○	○	○	○	1355
UNIX* MASCOT	○	○	○	○	○	1355
VAMP	○	○	○	○	○	1355
VIDEOPRO	○	○	○	○	○	1356
Virtual Disk	○	○	○	○	○	1356
VN	○	○	○	○	○	1357
VSV11-M/M-PLUS Driver	○	○	○	○	○	1357
VT (Virtual Terminal)	○	○	○	○	○	1358
VTERM III	○	○	○	○	○	1358
VTERM (Virtual Terminal Program)	○	○	○	○	○	1359
VTERM (Virtual Terminal Support): MINC BASIC/FORTRAN IV	○	○	○	○	○	1359
VTERM/4010	○	○	○	○	○	1360
VTUMC (Virtual Terminal Routine for UNIVAC 1100 Systems)	○	○	○	○	○	1360
X25-LAPB/HDLC-BAC	○	○	○	○	○	1361
X.Dot™	○	○	○	○	○	1361
XFR/XSL — RSX to RSX Communications Utility	○	○	○	○	○	1362
XNS/ITP (Xerox Network Systems Internet Transport Protocols)	○	○	○	○	○	1362
YH for DH11/DHV11	○	○	○	○	○	1363
YL for DLV11J	○	○	○	○	○	1364
YZ for DZ11/DZV11	○	○	○	○	○	1364
Text Management						
A-to-Z Word Processing	○	○	○	○	○	1368
CLE and BCE: Command Line Editors for RSX-11M	○	○	○	○	○	1368
CLE: Command Line Editing and Storage Utility for RSX-11M	○	○	○	○	○	1368
COMPAG	○	○	○	○	○	1369
COMPAG: Combine Pages for the Professional 300	○	○	○	○	○	1369
COMPOSE: VT200 Custom Character Set Generator Program	○	○	○	○	○	1369
CT*OS Spelling Corrector	○	○	○	○	○	1370
CTS-300 DEctype	○	○	○	○	○	1370
Data Search	○	○	○	○	○	1371
DEctype Word Processing Application	○	○	○	○	○	1371
DEEP (Data Entry and Editing Package)	○	○	○	○	○	1372
Dictionary with Phonetics	○	○	○	○	○	1372
DOC	○	○	○	○	○	1373
DOC: Document Output Program	○	○	○	○	○	1373
Documator/F	○	○	○	○	○	1373
DocuSearch Full-Text Retrieval System	○	○	○	○	○	1374
ED	○	○	○	○	○	1374

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
EDCMD: Command Line Editor and Command Line Recall	o	o	o	o	o	1374
EDMACS: A Screen Editor Program	o	o	o	o	o	1375
epsitool	o	o	o	o	o	1375
FETCH.B: An Editor in MU BASIC	o	o	o	o	o	1376
FILEDT	o	o	o	o	o	1376
FMS-11/RSX	o	o	o	o	o	1377
FMS-11/RT-11	o	o	o	o	o	1378
Forms-Control Simulation for DECwriters and Teletypes	o	o	o	o	o	1379
Framer	o	o	o	o	o	1379
GAMKED and CURKED: Programs for Editing GAMMA-11 and CURVE Macros	o	o	o	o	o	1379
HC.MAC — A Handler that Converts a Second Terminal into a Line Printer	o	o	o	o	o	1380
HCR/EDIT	o	o	o	o	o	1380
IGOR Document Preparation System	o	o	o	o	o	1381
INFOTEX	o	o	o	o	o	1381
IS-LEM Word Processing System	o	o	o	o	o	1382
Lawrence RUNOFF	o	o	o	o	o	1382
LCP01 Software	o	o	o	o	o	1383
LISTER: Listing Utility Program	o	o	o	o	o	1383
LISTRX: RSX-11D Multicolumn Listing Utility	o	o	o	o	o	1384
LST: A Paging Utility for Non-Form-Feed Devices	o	o	o	o	o	1384
Micro/RSX DECType	o	o	o	o	o	1384
MSPOOL	o	o	o	o	o	1385
NRL "English Text to VOTRAX Parameters" Algorithm	o	o	o	o	o	1385
OS/ED (Screen Editors)	o	o	o	o	o	1386
PC-Forms	o	o	o	o	o	1386
PROOF: A Proofreading Program/Spelling Checker	o	o	o	o	o	1386
PROSE-PLUS	o	o	o	o	o	1387
QTEXT	o	o	o	o	o	1388
RSTS/E INDENT	o	o	o	o	o	1388
RSX-11 TECO with Buffered Typeout, VT52 Window Support, and Doctor Game	o	o	o	o	o	1389
RSX-11M-PLUS DECType	o	o	o	o	o	1390
RUNOFF, Bonner Lab	o	o	o	o	o	1390
RUNOFF for RSX-11 and RSTS/E	o	o	o	o	o	1391
RUNOFF: M02.4-14	o	o	o	o	o	1391
RUNOFF M02.4H for the Professional 300	o	o	o	o	o	1392
RUNREF	o	o	o	o	o	1392
R/W (Report Writer), MCBA, Inc.	o	o	o	o	o	1393
SATURN-WP™ Word Processing/List Processing	o	o	o	o	o	1394
SELECT	o	o	o	o	o	1394
SPELL-11	o	o	o	o	o	1395
SPELL for RSX-11M	o	o	o	o	o	1395
Spelling Checker with Dictionary Maintenance Utility	o	o	o	o	o	1396
TECO-11 (Text Editor and Corrector) for RSTS/E	o	o	o	o	o	1396
TECO Full-Screen Editor	o	o	o	o	o	1397
TECO V28 for RT-11	o	o	o	o	o	1397
TECO V36	o	o	o	o	o	1398
TECO V36 for RSX-11D, RSX-11M, RSX-11M+, and IAS	o	o	o	o	o	1398
TED (The NDSU Terminal Editor)	o	o	o	o	o	1399
TEXT System for Technical Manuscript Preparation	o	o	o	o	o	1399
TIP (Terminal Interface Program)	o	o	o	o	o	1400
TXTWRT: An RT-11 Text Formatting Program	o	o	o	o	o	1400
Typist	o	o	o	o	o	1400
TYPSET — Digitized Character Subroutines	o	o	o	o	o	1401
/usr/tools	o	o	o	o	o	1401
VOILA!	o	o	o	o	o	1402

	P/OS	R/ST	R/SX	RT-11	ULTRIX-11	Page
VT152.TEC	○	○	○	○	○	1402
WORD-11	●	●	●	○	○	1403
WORD-11® Encryption Option	○	○	○	○	○	1403
WORD: Document Spelling Checker/Corrector	○	●	○	●	○	1404
WordMARC Author™	●	○	○	○	○	1404
WordMARC Composer™	●	○	○	○	○	1405
X	○	●	●	●	○	1405
Trade						
Automated Collection Management	○	○	●	○	○	1408
Clothier	○	○	○	●	○	1408
Credit Authorization	○	○	●	○	○	1408
ICAS 1123-Plus (Inventory Control Accounting System)	○	○	●	○	○	1409
IN-TOUCH™	○	●	○	○	○	1409
International Trade Software	○	○	○	●	○	1410
MAILHOUSE™	○	●	○	○	○	1410
Point of Sale	○	●	○	○	○	1411
POS/MIMS: Point-of-Sale System for Lumber Yards/Home Building Center Industry	○	●	○	○	○	1412
Retail Furniture System	○	○	○	○	○	1412
Shelf	○	○	○	○	○	1413
Specialty Item and Furniture Store System	○	●	○	○	○	1413
SpiriTrak™	○	○	●	○	○	1413
Sporty	○	○	○	○	●	1414
VantagePoint	○	●	○	○	○	1414
VCC (The Video Outlet Control Center)	○	○	○	●	○	1415
Transportation						
Automotive System	○	●	○	○	○	1418
Caswell Model (Apprehend)	○	●	○	○	○	1418
COLTS (Computerized On-Line Transportation System)	○	●	○	○	○	1418
DFI/FMS (Dealer Finance and Insurance/Forms Management System)	●	○	○	○	○	1419
EMDA's Super Car Rental and Control System	○	○	○	○	●	1419
EMIS (Equipment Management Information System)	○	●	○	○	○	1420
FLEET™	○	●	○	○	○	1420
Flight Watch	○	○	○	○	●	1421
Pigeonhole	○	●	○	○	○	1422
RAFT (Revenue Accounting for Truckers)	○	○	○	○	○	1422
TAPS (Transportation Accounting Packages)	○	○	○	○	○	1423
Transportation/Airline/Airport Management Information System	○	●	○	○	○	1423
WHAT-IS® — The Answer to Transportation and Supply/Distribution Networks	○	●	○	○	○	1423

Keyword Cross-Reference Guide

This alphabetical list of software product titles according to keyword usage uses **bold** type to indicate products available through DIGITAL and ● to indicate products that run on P/OS, RSTS, RSX, RT-11, and ULTRIX-11 operating systems.

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
A-to-Z						
A-to-Z	○	○	●	○	○	1076
A-to-Z Business Graphics	○	○	●	○	○	672
A-to-Z Compu-Share™ Accounting Family Accounts Payable	○	○	○	○	○	4
A-to-Z Compu-Share™ Accounting Family Accounts Receivable	○	○	○	○	○	4
A-to-Z Compu-Share™ Accounting Family General Ledger	○	○	●	○	○	5
A-to-Z Compu-Share™ Accounting Family Inventory Control	○	○	○	○	○	6
A-to-Z Compu-Share™ Accounting Family Order Entry	○	○	○	○	○	6
A-to-Z Data Inquiry	○	○	●	○	○	796
A-to-Z Document Transfer (DECdx)	○	○	●	○	○	1261
A-to-Z Electronic Mail	○	○	○	○	○	1076
A-to-Z Integrated System	○	○	●	○	○	1077
A-to-Z Integration Kit	○	○	●	○	○	256
A-to-Z Supercomp-Twenty™	○	○	●	○	○	611
A-to-Z Word Processing	○	○	●	○	○	1368
Accounting						
AAAMIS (Advertising Agency's Accounting and Management Information System)	○	○	○	○	●	1230
ACCDIBS (Accountant DIBS — Turnkey)	○	○	●	○	○	364
ACCDIBSAP (Accountant DIBS Accounts Payable)	○	○	●	○	○	364
ACCDIBSAR (Accountant DIBS Accounts Receivable)	○	○	●	○	○	364
ACCDIBSGL (Accountant DIBS General Ledger)	○	○	●	○	○	365
ACCDIBSIO (Accountant DIBS Inventory and Order Entry)	○	○	●	○	○	365
ACCDIBSPR (Accountant DIBS Payroll)	○	○	●	○	○	366
ACCDIBSSA (Accountant DIBS Sales Analysis)	○	○	●	○	○	366
ACCESS Financial Systems	○	○	●	○	○	614
Accounting	○	○	●	○	○	614
AdA — Advertising Agency System	○	○	○	●	○	1064
Administrator 4/11	○	○	●	○	○	615
AMS (Apparel Manufacturing System)	○	○	○	●	○	984
AnaTOLL	○	○	●	○	○	549
Apex Home Health Management System	○	○	○	○	○	735
Apparel Master™	○	○	○	○	○	369
ARCHON: FRS (Financial Reporting System)	○	○	●	○	○	617
Automotive Release Accounting	○	○	○	○	○	986
Automotive System	○	○	●	○	○	1418

1476 Keyword Cross-Reference Guide

	P/OS	R/S/S	R/S/X	RT-11	ULTRIX-11	Page
Barter	○	○	○	●	○	1064
Billing and Accounts Receivable System	○	○	○	○	○	737
Business Information System	○	○	○	○	○	619
C-11 Fixed Assets	○	○	○	●	○	1195
C-11 Sales Order Processing	○	○	○	○	○	1230
C-Chart System — Medical Accounting, Inventory	○	○	○	○	○	738
CALC (Accounting Calculator), Version II	○	○	○	○	○	1080
CAMIS (Consultants' Accounting and Management Information System)	○	○	○	○	●	961
CMI PROFIT	○	○	○	○	○	992
COLTS (Computerized On-Line Transportation System)	○	○	○	○	○	1418
Commercial Property Management	○	○	○	○	○	1195
Comprehensive Blood Bank System	○	○	○	○	○	746
Constructimate	○	○	○	○	○	215
Contractor Management System	○	○	○	○	○	216
COSAS (Comprehensive On-Line Student Accounting System)	○	○	○	○	○	441
Daymark Wholesale Distribution System	○	○	○	○	○	372
Depreciation System	○	○	○	○	○	627
DFM (Dental Financial Manager)	○	○	○	○	○	750
DIBS-11/UK	○	○	○	○	○	374
DIGICALC™	○	○	○	○	○	627
Distribusyst (Distribution Management System)	○	○	○	○	○	374
Distribution System (Wholesale/Retail)	○	○	○	○	○	376
Doctor Billing	○	○	○	○	○	751
DOVETAIL JOM (Job-Oriented Manufacturer)	○	○	○	○	○	1001
Dovetail Journal Publisher	○	○	○	○	○	1067
DOVETAIL Wholesale Distributor	○	○	○	○	○	376
Electrical Contracting	○	○	○	○	○	1182
Electrical Repair and Paging	○	○	○	○	○	1183
EMDA's Super Car Rental and Control System	○	○	○	○	○	1419
Employment Agency	○	○	○	○	○	1170
EUBA (Electrical Utility Billing and Accounting)	○	○	○	○	○	1183
Export Package	○	○	○	○	○	382
FINCON (Financial Control System)	○	○	○	○	○	1004
FINESSE	○	○	○	○	○	630
Freight Forwarder System	○	○	○	○	○	383
GBMS (General Business Management System)	○	○	○	○	○	815
General Ledger	○	○	○	○	○	634
General Ledger	○	○	○	○	○	947
General Ledger, Budgeting, and Checkwriter	○	○	○	○	○	635
GIMS (Government Information Management System)	○	○	○	○	○	658
GOV-11: Governmental Management System	○	○	○	○	○	658
Government-11	○	○	○	○	○	659
HBS Nursing Home Management Information System	○	○	○	○	○	755
HIS (Hospital Information System)	○	○	○	○	○	757
Hospital Accounting and Management System	○	○	○	○	○	758
Hospitality Management System	○	○	○	○	○	1249
Housing Authority — Section 8	○	○	○	○	○	1196
ICAS 1123-Plus (Inventory Control Accounting System)	○	○	○	○	○	1409
ICONS (Integrated Construction System)	○	○	○	○	○	220
IIAAS (Independent Insurance Agency Accounting System)	○	○	○	○	○	847
IMPCON (Inventory Management and Production Control System)	○	○	○	○	○	1012
Insurance Business System™	○	○	○	○	○	848
International Trade Software	○	○	○	○	○	1410
Inventory Control	○	○	○	○	○	1014
Job Cost	○	○	○	○	○	221
Job Shop Management	○	○	○	○	○	1251
KEREN	○	○	○	○	○	1069

	POS	RSTS	RSX	RT-11	ULTRIX-11	Page
KRONIX-11™	○	○	○	○	○	947
KRONIX-PC™	○	○	○	○	○	948
Law Firm Management System	○	●	○	○	○	948
LEADS (Local Education Agency Data System)	○	●	○	○	○	448
Legal Time and Accounting System	○	○	●	○	○	949
LIBERTY™ Agency Management System	○	○	○	○	○	849
MAMS (Municipal Accounting Management System)	○	○	●	○	○	660
Management Program 1000®	○	○	●	○	○	950
MAXX D Accounting and Management System for the Distribution Industry	○	○	●	○	○	388
MDS-4	○	○	○	○	○	392
MDX	○	○	○	○	○	767
MESTAMED	○	○	○	○	○	772
MGL-11 (Municipal General Ledger and Financial Reporting)	○	○	○	○	○	662
MOSTE (Management of System Telephone Expenses)	○	○	○	○	○	1185
MUNIS/PLUS	○	○	○	○	○	664
Mutual Insurance Processing System	○	○	○	○	○	849
NHIS (Nursing Home Information System)	○	○	○	○	○	776
Office Supply/1000	○	○	○	○	○	1097
OGA\$ (Oil and Gas Accounting System)	○	○	○	○	○	425
Order Entry/Invoicing	○	○	○	○	○	395
Order Processing System	○	○	○	○	○	397
Papersoft	○	○	○	○	○	398
PAS-11/D (Professional Accounting Series-11/Dental)	○	○	○	○	○	777
PAS-11/M (Professional Accounting Series-11/Medical)	○	○	○	○	○	777
PCO (Pest Control Operators Management System)	○	○	○	○	○	1252
Physician Systems	○	○	○	○	○	781
Pioneer COMMAND Fixed-Assets Module	○	○	○	○	○	643
Pioneer COMMAND Purchase Order Processing Module	○	○	○	○	○	402
Pioneer COMMAND Sales Order Processing Module	○	○	○	○	○	403
PM32 Order Processing/Inventory/Sales Analysis	○	○	○	○	○	403
PMIS (Plant Management Information System)	○	○	○	○	○	553
PPBS: Budgeting/GL/AR/AP	○	○	○	○	○	645
Practice Management System	○	○	○	○	○	782
Practice Management System	○	○	○	○	○	782
PRO-IV Medical Management	○	○	○	○	○	783
PRO-IV Payroll/Personnel Management	○	○	○	○	○	1175
PRO-IV Sales Analysis	○	○	○	○	○	1239
PRO/DIGICALC	○	○	○	○	○	646
PROFILE — Integrated Banking System	○	○	○	○	○	646
Project Delta, Section C: Business	○	○	○	○	○	971
Project Delta, Sections G and H: Business and Data Processing	○	○	○	○	○	647
Property Management (Rental)	○	○	○	○	○	1199
QMS PROGRAMS® Computer Software/Cost of Quality and Material Review	○	○	○	○	○	1041
RAFT (Revenue Accounting for Truckers)	○	○	○	○	○	1422
RAM 12™	○	○	○	○	○	406
REA Accounting Software	○	○	○	○	○	1187
REACT	○	○	○	○	○	1187
RECAP	○	○	○	○	○	665
Residential Property Management	○	○	○	○	○	1202
Resort Property Management	○	○	○	○	○	1253
RISKAN1/RISKAN2 (Risk Analysis — General/Risk Analysis — Accounting)	○	○	○	○	○	971
SATURN-BASE®	○	○	○	○	○	838
School Business Administrator	○	○	○	○	○	457
School Fiscal Accounting	○	○	○	○	○	458
Series DEC	○	○	○	○	○	224

	P/OS	AS/TS	RSX	RT-11	ULTRIX-11	Page
Soft Drink Bottler's Package	○	●	●	○		408
Specialty Item and Furniture Store System	○	○	○	○		1413
Spectrum	○	○	○	○		788
Sprint	○	○	○	○		789
TACT (Total Agribusiness Computer System)	○	●	○	○		157
Television Operations Systems	○	○	○	○		1073
Temporary Services Personnel System	○	●	○	○		1176
TIMANA-IMPRS Time-Analysis System	○	○	●	○		1177
TIMETRACK: Project Time Accounting	○	○	○	○		1177
TMR® (The Medical Record)	○	○	○	○		791
TOLAS	○	○	○	○		410
TPINS (Times Publishing Interactive Newsprint Inventory System) ..	○	○	○	○		1073
Transportation/Airline/Airport Management Information System	○	●	●	○		1423
TRIMS (Tire Dealers and Retreaders Information Management System)	○	○	○	○		411
UDS IAS (Insurance Accounting System)	○	○	○	○		851
UDS PMAS (Property Management Accounting System)	○	○	○	○		1203
UDS REAS (Real Estate Accounting System)	○	○	○	○		1204
Vet System/2000	○	○	○	○		792
Vista Publishing and Distribution System	○	○	○	○		1073
VMIS (Visiting Nurse Home Health Management Information System)	○	○	○	○		792
WDS/2 (Warehouse Distributor System)	○	○	○	○		413
Wholesale Lumber Management	○	○	○	○		1244
Wine and Beverage Distribution System	○	○	○	○		417

Accounts payable

A-to-Z Compu-Share™ Accounting Family Accounts Payable	○	○	○	○		4
ABS Accounting Software	○	○	○	○		8
ACCDIBSAP (Accountant DIBS Accounts Payable)	○	○	○	○		364
Accountant II Accounts Payable System	○	○	○	○		9
Accounts Payable	○	○	○	○		11
Accounts Payable	○	○	○	○		12
Accounts Payable	○	○	○	○		12
Accounts Payable	○	○	○	○		13
Accounts Payable	○	○	○	○		13
Accounts Payable	○	○	○	○		14
Accounts Payable	○	○	○	○		14
Accounts Payable	○	○	○	○		15
Accounts Payable	○	○	○	○		16
Accounts Payable	○	○	○	○		16
Accounts Payable	○	○	○	○		17
Accounts Payable	○	○	○	○		18
Accounts Payable	○	○	○	○		18
Accounts Payable and Cash Disbursements Package	○	○	○	○		19
Accounts Payable System	○	○	○	○		20
Accounts Payable System	○	○	○	○		20
Accounts Payables	○	○	○	○		21
AiM™ Payables	○	○	○	○		30
AIM/AP (Accounting Information Manager for Accounts Payable)	○	○	○	○		32
A/P (Accounts Payable)	○	○	○	○		33
A/P (Accounts Payable), MCBA, Inc.	○	○	○	○		33
APPGEN Accounts Payable	○	○	○	○		35
APS (Accounts Payable System)	○	○	○	○		735
Arts	○	○	○	○		162
Automated Voucher Payment System	○	○	○	○		735
C-11 Accounts Payable	○	○	○	○		40
CAS.2 (Accounts Payable)	○	○	○	○		47

	P/Os	RSTS	RSX	RT-11	ULTRIX-11	Page
CLASS — Education Accounts Payable A/P System	o	●	o	o	o	436
Clover Personal Income Tax Package	o	o	●	o	o	53
CSI Accounts Payable	o	o	o	o	o	56
CSI Business System	o	o	●	o	o	56
DDP APS (Accounts Payable System)	o	●	●	o	o	57
DIBS-11	o	●	o	o	o	62
DIBS-11/CTS-300	o	o	o	o	o	63
FACS — Accounts Payable	o	●	o	o	o	65
Fiscal Accounting	o	●	o	o	o	68
Flexware Accounts Payable	o	o	o	o	o	74
GL Eleven	o	●	o	o	o	87
HIMS (Hospitality Information Management System)	o	o	o	o	o	1249
IFAS (Interactive Financial Accounting System)	o	●	●	o	o	89
IMPCON-FMS	o	●	●	o	o	90
Insurance Agency Package	o	o	o	o	o	848
Integrated Business Software	o	o	●	o	o	90
Integrated Inventory Management System	o	●	o	o	o	636
InterAP™	o	o	o	o	o	91
LT/AMS — Financial Management for Long-Term-Care Facilities	o	●	o	o	o	765
MANAGE — Data Base Management System	o	●	o	o	o	94
MAP-11 (Municipal Accounts Payable)	o	o	●	o	o	660
MAXX A Management Accounting System	o	●	o	o	o	95
MBS AP (Manus Business Systems Accounts Payable)	o	●	●	o	o	95
MJA™ Accounts Payable for the PRO 350	●	o	o	o	o	97
MUNIS (Municipal Information Systems)	o	o	●	o	o	663
NFC Property Management	o	●	●	o	o	103
Payables	o	o	o	o	o	779
Perspective/700 Accounts Payable	o	●	o	o	o	116
Pioneer COMMAND Accounts Payable Module	o	●	o	o	o	118
Plycom Core Accounting Systems	o	●	o	o	o	120
PM27 Accounts Payable	o	o	●	o	o	121
Pro-Accountant: Modular Integrated Accounting System	●	●	●	o	o	123
PRO-IV Accounts Payable	o	●	●	o	o	123
ProBiz™ Accounts Payable	o	o	o	o	o	127
Property and Casualty Insurance System	o	●	o	o	o	849
SACCPAY (Accounts Payable Package)	o	o	o	●	o	135
Sauer Library	o	●	o	o	o	136
School Fiscal Accounting	o	o	●	o	o	458
TAPS (Transportation Accounting Packages)	o	●	o	o	o	1423
TBS Accounts Payable System	o	●	●	o	o	137
Timeline Accounts Payable	o	o	o	o	o	141
TRON Accounts Payable	●	●	●	●	o	144
Turnkey Data	o	●	●	o	o	146
UDS General Ledger Accounting	o	o	o	o	o	147
WIP (Work In Progress)	o	●	o	o	o	147

Accounts receivable

A-to-Z Compu-Share™ Accounting Family Accounts Receivable	o	o	●	o	o	4
Abax Rental Management System	o	o	●	o	o	1246
ABS Accounting Software	o	●	o	o	o	8
ACCDIBSAR (Accountant DIBS Accounts Receivable)	o	●	o	o	o	364
Accountant II Accounts Receivable System	o	o	●	o	o	9
Accounts Receivable	o	●	o	o	o	21
Accounts Receivable	o	o	●	o	o	22
Accounts Receivable	o	●	o	o	o	22
Accounts Receivable	o	o	o	o	o	22
Accounts Receivable	o	●	o	o	o	23
Accounts Receivable	o	o	●	o	o	23

1480 Keyword Cross-Reference Guide

	P/Os	RSTS	RSX	RT-11	ULTRIX-11	Page
Accounts Receivable	○	○	●	●	○	24
Accounts Receivable	○	○	●	○	○	25
Accounts Receivable	○	○	○	○	●	25
Accounts Receivable	○	○	○	○	○	26
Accounts Receivable and Statement Generation	●	○	○	○	○	27
Accounts Receivable Status	○	○	○	○	○	1180
Accounts Receivable System	○	○	○	○	○	28
Accounts Receivable/Billing	○	○	○	○	○	28
Accounts Receivables	○	○	○	○	○	29
AIM™ Receivables and Billing System	○	○	○	○	○	31
AIM/FOD (Accounting Information Manager for Fuel Oil Delivery) ...	○	○	○	○	○	368
AISCorp. Medical Management Systems	○	○	○	○	○	734
APPGEN Accounts Receivable	○	○	○	○	○	35
A/R (Accounts Receivable)	○	○	○	○	○	38
A/R (Accounts Receivable), MCBA, Inc.	○	○	○	○	○	38
ARCHON: BILLS	○	○	○	○	○	431
BARCS	○	○	○	○	○	1180
Broadcast Management	○	○	○	○	○	1065
Buddy's Membership Dog Club Module	○	○	○	○	○	39
C-11 Accounts Receivable	○	○	○	○	○	41
Call Tracker	○	○	○	○	○	1231
CAPS	○	○	○	○	○	740
CARE/DM	○	○	○	○	○	741
CAS.3 (Accounts Receivable)	○	○	○	○	○	48
CHIPS	○	○	○	○	○	371
CLASS — Education Billing and Receivables System	○	○	○	○	○	437
Commercial Property Management	○	○	○	○	○	1195
COMPCARE (Comprehensive Care Centers)	○	○	○	○	○	746
Country Club Accounts Receivable	○	○	○	○	○	166
CSI Business System	○	○	○	○	○	56
DDP PAR (Accounts Receivable)	○	○	○	○	○	59
Dialysis Clinic Billing	○	○	○	○	○	750
DIBS-11	○	○	○	○	○	62
DIBS-11/CTS-300	○	○	○	○	○	63
Episodic Billing System	○	○	○	○	○	752
FACS — Accounts Receivable/Sales Analysis	○	○	○	○	○	65
FACS — Newspaper Circulation and Accounts Receivable	○	○	○	○	○	1068
FACS (Flexible Automated Collection System)	○	○	○	○	○	1088
Fiscal Accounting	○	○	○	○	○	68
Flexware Accounts Receivable	○	○	○	○	○	74
FPS (Fruit Packing System)	○	○	○	○	○	154
Fuel Oil Accounting/Delivery Scheduling	○	○	○	○	○	384
GL Eleven	○	○	○	○	○	87
Group Purchasing System	○	○	○	○	○	754
IFAS (Interactive Financial Accounting System)	○	○	○	○	○	89
IMPCON-FMS	○	○	○	○	○	90
Insurance Agency Package	○	○	○	○	○	848
Integrated Business Software	○	○	○	○	○	90
Integrated Inventory Management System	○	○	○	○	○	636
InteRx™	○	○	○	○	○	760
INTFIN (Internal Financing Package)	○	○	○	○	○	638
Legal Time and Billing System	○	○	○	○	○	949
LT/CARE — Accounts Receivable for Long-Term-Care Facilities	○	○	○	○	○	766
MANAGE — Data Base Management System	○	○	○	○	○	94
Management Program 1000®	○	○	○	○	○	950
Manufacturer Order Processing	○	○	○	○	○	1018
MAR-11 (Municipal Accounts Receivable)	○	○	○	○	○	661
MAXX A Management Accounting System	○	○	○	○	○	95

	P/OS	R/ST	RSX	RT-11	ULTRIX-11	Page
MBS AR (Manus Business Systems Accounts Receivable)	o	●	o	o	o	96
MDS (Medical Data System)	o	●	o	o	o	767
Medical Billing and Accounts Receivable	o	o	o	o	o	768
Medical Laboratory System	o	●	o	o	o	768
Medical Office Manager	o	●	o	o	o	768
MEDICOMS (Medical Office Receivables Management System)	o	o	●	o	o	770
MEDISYS	o	o	●	o	o	771
MJA™ Accounts Receivable for the PRO 350	●	o	o	o	o	98
MODS (Manus Oil Dealer System)	o	o	●	o	o	392
MPMS (Medical Practice Management System)	o	o	o	●	o	773
MRS (Medical Records System)	o	●	o	o	o	774
MUNIS (Municipal Information Systems)	o	o	●	o	o	663
NCS (National Creditor System)	o	●	o	o	o	101
NFC Property Management	o	●	●	o	o	103
PAIS (Patient Accounting and Information System)	o	●	o	o	o	776
Paramedics Billing	o	o	o	o	o	776
PARS: Professional Time, Billing A/R	o	●	o	o	o	106
Pathology Billing	o	●	o	o	o	778
Patient Management System	o	o	o	o	o	779
PBS (Produce Brokerage System)	o	●	●	o	o	156
Perspective/700 Accounts Receivable	o	●	o	o	o	116
PFS (Patient Funds System)	o	o	o	o	o	780
Pioneer COMMAND Accounts Receivable Module	o	●	o	o	o	118
Plycom Core Accounting Systems	o	●	o	o	o	120
PM11 Accounts Receivable	o	o	●	o	o	121
PMS (Property Management System)	o	o	o	o	o	1198
POMS (Professional Office Management System)	o	●	●	o	o	951
Practice Management	o	o	o	●	o	970
Pro-Accountant: Modular Integrated Accounting System	o	●	●	o	o	123
PRO-IV Accounts Receivable	●	●	o	o	o	124
ProBiz™ Accounts Receivable	o	o	●	o	o	128
Property and Casualty Insurance System	o	o	o	o	o	849
PTB (Professional Time and Billing)	o	●	o	●	o	131
Radiology Accounts Receivable Management System	o	o	o	o	o	785
RAS (Receivable Accounting System)	o	●	o	o	o	133
Residential Property Management	o	●	o	●	o	1202
RXS (Pharmacy System)	o	●	o	o	o	787
SACCREC (Accounts Receivable Package)	o	o	o	o	o	135
Sauer Library	o	●	o	o	o	136
TAPS (Transportation Accounting Packages)	o	●	o	o	o	1423
TBS Accounts Receivable System	o	o	●	o	o	138
Telephone Accounting and Billing System	o	o	o	●	o	1187
Time and Billing	o	o	o	●	o	973
Timeline Accounts Receivable	o	●	o	o	o	141
TRON Accounts Receivable	●	●	●	●	●	145
Turnkey Data	o	●	●	o	o	146
UDS General Ledger Accounting	o	o	o	●	o	147
VantagePoint	o	●	o	o	o	1414
Welding Distributor System — TMS BASIC +, 2 + 2, and Super +	o	●	o	o	o	414
WHOLESALE-11	o	o	o	●	o	415
WIP (Work In Progress)	o	o	o	o	o	147
XK-11	o	o	o	●	o	418
A/D, D/A						
ADCON (A/D Conversions) Package for Use with ADV11-C and KVV11-C	o	o	o	●	o	228
ADF01/RSX Subroutine Library	o	o	o	●	o	228
ADIOM (Analog Digital Input/Output Modules)	o	o	●	o	o	558

1482 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
ADLIB	o	o	●	●	o	981
ASEA's DS-8/QDBC-11 Device Driver	o	o	●	●	o	180
BASIC and FORTRAN Support Packages	o	o	●	●	o	469
CPLIB	o	o	o	●	o	269
DACON: D/A Conversions Package for Use with AAV11-C and KVV11-C	o	o	o	●	o	233
DTLIB	o	o	o	●	o	276
European MINC Package #3 — Data Acquisition	o	o	o	●	o	237
EVOKE	o	o	o	●	o	753
Fast Fourier Transform and Two Applications	o	o	o	●	o	237
FORTRAN—Callable Subroutines Package for Fast Continuous A/D on the MINC	o	o	o	●	o	238
FORTRAN/RT-11 Laboratory Extension	o	o	o	●	o	238
GAB (General Program for the Analysis of Biopotentials)	o	o	o	●	o	1214
GENLOG: Shareable Data Logging Package	o	o	o	●	o	239
I*S*P* (Interactive Signal Processor)	o	o	●	o	o	502
IXV-11/RSX Driver	o	o	●	o	o	1317
Laboratory Peripheral Device Handlers for the LSI-11	o	o	o	●	o	579
Machinery Monitoring Software System	o	o	●	o	o	1017
MINC-11 Data Acquisition Package for RSX-11M	o	o	●	o	o	241
Nicolet 1090 Digital Oscilloscope Handler and Interface to PDP-11	o	o	o	●	o	244
PC/DBS (Process Control Data Base System)	o	o	●	o	o	1030
PLOT	o	o	o	●	o	708
RSX-11M Datalogging System for Acurex Netpac	o	o	●	o	o	249
RSXLIB	o	o	o	●	o	333
RT-11/FORTRAN Enhancement Package for MINC (FEP)	o	o	o	●	o	1144
RT11/03 FORTRAN Extensions	o	o	o	●	o	934
SCAN (Single-Channel Analyzer)	o	o	o	●	o	337
SIN-DAS (Single-User Data Acquisition System)	o	o	●	●	o	251
Advertising/promotion						
AAAMIS (Advertising Agency's Accounting and Management Information System)	o	o	o	o	●	1230
AdA — Advertising Agency System	o	o	●	●	o	1064
Barter	o	o	o	●	o	1064
CP-11 Coupon Redemption System	o	●	●	o	o	1232
Direct Marketing and Mail Order Management System	o	o	o	o	o	1233
Dovetail Journal Publisher	o	●	o	o	o	1067
Sales Lead Analysis	o	●	o	o	o	1242
Aeronautics/aerospace						
DESIRE (Direct-Executing Simulation in Real Time)	o	o	o	●	o	489
Flight Watch	o	o	o	●	o	1421
GSE-11	o	o	●	●	o	286
ISL (Interactive Simulation Language)	o	o	o	●	o	507
MIL—Concept Production Control System	o	●	o	o	o	1021
STI-MATVAM	o	o	●	o	o	536
Structural Member Analysis Programs	o	o	●	o	o	538
TELEVNT/TELSET/TELDAX: Telemetry Acquisition and Reduction VAMP (Vibration Analysis and Measurement Processor)	o	o	●	●	o	541
	o	o	●	●	o	544
Application development						
ABC	o	●	o	●	o	256
ABC/GRAF	o	●	o	●	o	672
ADE/RSTS: Information Management for Office Professionals	o	o	o	o	o	1160
ADE/RSX	o	o	●	o	o	1160
APPGEN Applications Generator	o	o	o	o	o	259
ASCII Driven Menu for RSTS/E	o	●	o	o	o	260
BASEWAY Software	o	o	o	o	o	987

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
BASIC-PLUS-2 for RSTS/E	○	●	○	○	○	862
BASIC-PLUS-2 for RSX-11M and RSX-11M-PLUS	○	○	●	○	○	863
BSO/Fmtcnv (Format Conversion Program)	○	○	○	○	○	230
Chariot	○	○	○	○	○	51
Data Boss/4	○	●	○	○	○	804
DATAMAT	○	○	●	○	○	805
DEctalk Application Support Library	○	●	○	○	○	274
DIBS-11 Order Entry/Inventory Management for CTS-300	○	○	○	○	○	62
DIBS-11 Order Entry/Inventory Management for RSTS/E	○	○	●	○	○	63
MMS-500 (Data Management Services)	○	●	○	○	○	276
EDCMD: Command Line Editor and Command Line Recall	○	○	●	○	○	1374
FEPCM Software Tools Kit	○	○	●	○	○	279
FILETAB-D	●	○	●	●	●	280
FIXIT: BASIC Translator	○	●	●	○	○	881
Flexware Application Development System	○	○	○	○	○	281
FMS-11/IAS	○	○	○	○	○	812
FMS-11/RSTS	○	●	○	○	○	813
Form Driver	○	●	○	○	○	283
IMSL Library	○	○	●	○	○	506
INMAGIC	○	●	●	○	○	817
IRIS-MINI	○	○	○	○	○	577
Micro-Master Data Base Applications Generator	○	○	○	○	●	300
Microbench 6800 Cross-Assembly Package	○	●	●	○	○	301
Microbench 68000 Cross-Assembly Package	○	○	●	○	○	302
Microbench 6805 Cross-Assembly Package	○	○	●	○	○	303
Microbench 6809 Cross-Assembly Package	○	○	●	○	○	304
Microbench 8021/8035/8048/8748 Cross-Assembly Package	○	○	●	○	○	305
Microbench 8051 Cross-Assembly Package	○	○	●	○	○	306
Microbench 8080/8085 Cross-Assembly Package	○	○	●	○	○	307
Microbench 8086/8087/8088 Cross-Assembly Package	○	○	●	○	○	308
Microbench C Cross-Compiler for the Intel 8086/8087/8088	○	○	○	○	●	309
Microbench FORTRAN-77 Cross-Compiler for the Intel 8086/8088	○	○	●	○	○	310
Microbench Pascal Cross-Compiler for the Intel 8086/8088	○	○	●	○	○	311
Microbench Z80 Cross-Assembly Package	○	○	●	○	○	313
Microbench Z8000 Cross-Assembly Package	○	○	●	○	○	314
MicroPower/Pascal-RT	○	○	○	○	○	316
Micro/RSTS BASIC-PLUS-2	○	○	●	○	○	906
Micro/RSX BASIC-PLUS-2	○	○	○	○	○	907
MIIS Standard	○	○	○	○	○	1125
MIIS/MAGIC (MEDITECH Interpretive Information System)	○	○	○	○	○	1126
MIMER: The Software Machine	○	○	○	○	○	825
MIRA	○	○	○	○	○	319
Objective-C	○	○	○	○	○	913
ODTV09: RT-11 Debugging Tool	○	○	○	○	○	321
p-System™ Version IV.2.1	○	○	○	○	○	1130
PARSE/RSX: A Flexible FORTRAN-77 Filespec Parser	○	○	○	○	○	586
Peregrine Four	○	○	○	○	○	323
PRO-IV Applications Processor	●	●	○	○	○	920
PRO-IV Fourth Generation Language	●	●	○	○	○	920
PRO-RDM (Responsive Data Manager)	○	○	○	○	○	325
PRO/BASIC	○	○	○	○	○	921
Professional Host Tool Kit	○	○	○	○	○	922
Professional Host Tool Kit BASIC-PLUS-2	○	○	○	○	○	923
Professional Host Tool Kit DIBOL	○	○	○	○	○	923
Professional Host Tool Kit FORTRAN-77	○	○	○	○	○	924
Professional Host Tool Kit Pascal	○	○	○	○	○	925
PROFILE — Integrated Banking System	○	○	○	○	○	646
PRO/Tool Kit	●	○	○	○	○	327

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
PRO/Tool Kit BASIC-PLUS-2	●	○	○	○	○	925
PRO/Tool Kit FORTRAN-77 DEBUG	●	○	○	○	○	328
PRO/Tool Kit Pascal	●	○	○	○	○	928
PRO/Tool Kit Real-Time Interface Library	●	○	○	○	○	328
RDM (Responsive Data Manager)	○	○	●	●	○	329
RDM™ (Responsive Data Manager)	●	○	○	○	○	835
RQRDMA: DMA Interlock for RSX	○	○	●	○	○	332
RSTS/E File List and Scan Utilities	○	○	●	○	○	332
RTEM-11 (RT-11 Version 5.2 Emulator for RSX)	○	○	○	●	○	335
RTFILE	●	●	●	○	○	837
SATURN-BASE®	●	○	○	○	○	838
SKIPAG: File Utility to Skip Blocks/Pages	○	○	○	○	○	597
TBS PDS (Pascal Development System)	○	○	●	○	○	349
TRAMP for RSX-11 and RT-11	○	○	○	○	○	353
UNIFY Relational Data Base Management System	○	○	○	○	●	355
USER-11 Database Management System	○	○	○	○	○	357
VIOS (Video Input/Output and Processing Software)	○	○	○	○	○	254
VISUAL/menu	○	○	○	○	○	359
VOILA!	○	○	○	○	○	1402
VRTARY (Virtual Array Access Routines for RT-11 and TSX-PLUS)	○	○	○	○	○	360
Architecture						
Action List	○	○	●	○	○	960
Drawing Register	○	○	○	○	○	682
DUCTSYS — HVAC Ductwork and Fittings Drawing System	○	○	○	○	○	683
Estimating System	○	○	○	○	○	218
GINTRAN (Graphics Input and Transformation)	○	○	○	○	○	691
GPUC (General-Purpose User Command Package)	○	○	○	○	○	497
GROUSE Ground Modeling System	○	○	○	○	○	498
PALETTE™: Computer-Aided Drafting and Design	○	○	○	○	○	705
PCM (Project Cost Model)	○	○	○	○	○	968
PIPESYS — Double-Line Piping Drawing System	○	○	○	○	○	707
QUEST Graphical and Text Information System	○	○	○	○	○	717
RUCAPS (Really Universal Computer-Aided Production System)	○	○	○	○	○	526
SDP	○	○	○	○	○	338
STAG II Drawing System	○	○	○	○	○	727
Wall	○	○	○	○	○	732
Wood Beam Check	○	○	○	○	○	546
Artificial intelligence						
IPACS (Interactive Pattern Analysis and Classification System)	○	○	○	○	○	1216
Prolog-1 (Programming in Logic)	○	○	○	○	○	325
Arts and leisure						
CHRIS (CISCO Hotel and Resort Information Systems)	○	○	○	○	○	1247
Court Club Management System	○	○	○	○	○	1248
Hospitality Management System	○	○	○	○	○	1249
Innkeepers Management System	○	○	○	○	○	1250
Resort Property Management	○	○	○	○	○	1253
Timeshare Contract Management System	○	○	○	○	○	1255
Travel System 4/11	○	○	○	○	○	1256
VCC (The Video Outlet Control Center)	○	○	○	○	○	1415
Assemblers						
80/DS (PL/M-80) (Development System)	○	○	○	○	○	854
Advanced Development Tool Kit	○	○	○	○	○	258
BSO/Assembler Microprocessor Relocating Assemblers	○	○	○	○	○	262
BSO/Debug Microprocessor Symbolic Debuggers	○	○	○	○	○	263
BSO/Mlink Microprocessor Program Linker	○	○	○	○	○	264

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
C Cross-Compiler for National Semiconductor Series 32000	o	o	●	o	o	865
C68	o	o	o	o	●	869
Cross-Assemblers	o	o	o	●	o	270
epsitool:assemble	o	o	●	o	o	278
HCR/Pascal	o	o	o	o	o	890
KMC11 Tools	o	o	●	o	o	289
LOAD PDT	o	o	o	●	o	1162
LSI-11 Microprogramming Tools, Version 1.0	o	o	o	●	o	292
MACRO Package for MACRO-11 to Assemble INTEL 8008 Code	o	o	o	●	o	900
MACRO Package for MACRO-11 to Assemble INTEL 8080 Code	o	o	o	o	●	900
MACRO Package for MACRO-11 to Assemble Motorola 680X Code	o	o	o	●	o	900
MACRO Package for MACRO-11 to Assemble Signetics 2650 Code	o	o	o	o	●	901
MACSP (MACRO-11/SP Structured Programming Macros)	o	o	●	o	o	902
Motorola 68000/10 Cross- and Resident Assembler	o	o	●	o	o	320
PAL8XR (PDP-8/Intersil 6100 Cross-Assembler Under RT-11)	o	o	o	●	o	914
PDP-8 Cross-Assembler and Utilities for RSX-11D	o	o	o	●	o	246
PL-11: High-Level Assembler Language	o	o	●	o	o	918
RASM (Reverse Assemblies for RT-11)	o	o	o	●	o	928
RTEM-11 (RT-11 Emulator for RT-11, Version 5.1)	o	o	●	o	o	334
RTEM-11 (RT-11 Version 5.2 Emulator for RSX)	o	o	●	o	o	335
RTL/2 (Real-Time Language)	o	o	●	o	o	935
SUBS (Standard Subroutine Library), Version II	o	●	o	o	o	346
SUPERMAX	o	●	●	●	o	941
UNIFORTH	o	o	●	o	o	942
Uniq™ UNIX* System V	o	o	o	o	o	1154
UNITAP/UNIWRI	o	●	o	o	o	253
Utility Routines for a PDP-11/45 with a Floating-Point Processor	o	●	●	●	o	543
Asynchronous communication						
ACCULINK™	o	●	●	o	o	1266
BLAST® (Blocked Asynchronous Transmission)	o	o	●	o	o	1269
BSO/Com-1	o	o	o	o	o	1270
BURCOM (DIGITAL/Burroughs Communication System)	●	●	●	o	o	1271
CALOUT	o	●	o	o	o	1272
DECdx/RSTS	o	o	o	o	o	1280
DECnet-11M-PLUS: RSX-11M-PLUS Network Software	o	o	●	o	o	1281
DECnet-11M: RSX-11M Network Software	o	o	●	o	o	1282
DECnet-11S: RSX-11S Network Software	o	o	o	o	o	1283
DECnet-IAS	o	o	o	o	o	1284
DECnet-Micro/RSX	o	o	●	o	o	1284
DECnet-RT	o	o	o	o	●	1286
DECnet/SNA RSX Application Interface	o	o	●	o	o	1288
DIALUP	o	o	●	o	o	1290
DMG/NET	o	o	o	o	o	1293
DX/11M	o	o	●	o	o	1299
DX/RSTS	o	o	●	o	o	1299
FTU (File Transfer Utility)	o	o	o	●	o	576
GOULD/DEC Data Link	o	o	●	o	o	1305
GVS/File	o	o	o	●	o	1306
intRlab	o	o	o	o	o	761
LAT-11	o	o	o	o	o	1322
LSTERM: Virtual Terminal Program	o	o	o	●	o	1323
MADRV (Memory-Assisted Disk MA)	o	o	●	o	o	1324
poly-COM™	o	●	●	●	o	1332
PRO/Communications for Diskette or Hard Disk	●	o	o	o	o	1335
Q-NET — Interface to DECnet	o	o	●	o	o	1339
RSX-11/PROVUE	o	o	o	o	o	722
SBC-11/21 Downloader	o	o	o	●	o	1347

1486 Keyword Cross-Reference Guide

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
TSTE (Time-Share Terminal Emulator)	○	○	○	●	○	1352
VTERM III	○	●	○	○	●	1358
VTERM (Virtual Terminal Program)	○	○	○	○	○	1359
VTERM/4010	○	●	○	○	●	1360
VTUMC (Virtual Terminal Routine for UNIVAC 1100 Systems)	○	○	○	○	○	1360
YH for DH11/DHV11	○	○	○	○	○	1363
YL for DLV11J	○	○	○	○	○	1364
YZ for DZ11/DZV11	○	○	○	○	○	1364
Audit						
Accounting	○	●	○	○	○	614
Accounts Receivable	○	○	○	○	○	24
CARS (Computer Audit Retrieval System)	○	○	○	○	○	183
CLASS — Educational Financial System	○	○	○	○	○	439
FACS — Accounts Receivable/Sales Analysis	○	○	○	○	○	65
LT/CARE — Accounts Receivable for Long-Term-Care Facilities	○	○	○	○	○	766
Random-Number Generator	○	○	○	○	○	132
SACCPAY (Accounts Payable Package)	○	○	○	○	○	135
SACCREC (Accounts Receivable Package)	○	○	○	○	○	135
SGENLED (General Ledger Package)	○	○	○	○	○	136
SRF (System Reporting Facility)	○	○	○	○	○	202
Automotive						
AADC (Advanced Automated Data Collection)	○	○	○	○	○	979
Automotive Release Accounting	○	○	○	○	○	986
Automotive System	○	○	○	○	○	1418
CBUMP — Automotive Bumper Dynamic Impact	○	○	○	○	○	475
CLENS — Automotive Head Lamp Design Code	○	○	○	○	○	479
CSEAT — Seat Frame Analysis Code	○	○	○	○	○	486
DFI/FMS (Dealer Finance and Insurance/Forms Management System)	○	○	○	○	○	1419
EMDA's Super Car Rental and Control System	○	○	○	○	○	1419
FMS (Fleet Management System)	○	○	○	○	○	1184
Marketing Strategy Simulation for Minicomputers	○	○	○	○	○	1236
MBS WD (Manus Business Systems Automotive Parts Warehouse Distributor System)	○	○	○	○	○	391
SSMS (Service Station Management System)	○	○	○	○	○	409
TRIMS (Tire Dealers and Retreaders Information Management System)	○	○	○	○	○	411
VEH-11 (Vehicle Registration)	○	○	○	○	○	667
Vehicle Cost and PM	○	○	○	○	○	1256
Vehicle Ledger System	○	○	○	○	○	1190
Banking						
ABC (Automated Bank Control System)	○	○	○	○	○	612
ACCESS Financial Systems	○	○	○	○	○	614
AESOP (Aggregate Exception System for Mortgage Portfolios)	○	○	○	○	○	1194
Automated Collection Management	○	○	○	○	○	1408
Banker's Credit Management System	○	○	○	○	○	617
Banking — General Applications	○	○	○	○	○	617
BASYS (Retail Banking System)	○	○	○	○	○	619
C-11 Mortgage Banking I	○	○	○	○	○	620
C-11 Mortgage Banking II	○	○	○	○	○	946
Canadian Mortgage Calculation Program	○	○	○	○	○	622
Collection-Plus	○	○	○	○	○	623
Commercial Loan System	○	○	○	○	○	623
County Treasurer's Investment Management	○	○	○	○	○	624
CUSYS (Credit Union System)	○	○	○	○	○	624
Decision Tree	○	○	○	○	○	626

	P/Os	RSTS	RSX	RT-11	ULTRIX-11	Page
Forced Closed Accounts	o	o	o	●	o	632
FTX Funds Transfer System	o	o	●	o	o	633
GBS (Genesys Banking System)	o	o	o	●	o	634
GENESYS	o	o	o	o	o	635
ILSA (Installment Loan Service Accounting)	o	●	●	o	o	1197
INTRST.PKG	o	●	o	o	o	638
Money Orders System	o	o	o	●	o	639
Mortgage Loan Closing Software	o	●	o	o	o	1198
Official Checks System	o	o	o	●	o	641
On-Line Share Registration	o	●	o	o	o	641
PAX	o	o	o	●	o	642
Payroll	o	●	o	o	o	1172
Performance Manager	o	o	o	o	o	642
PORTSIS™ Investment Management	●	o	●	o	o	644
PROFILE — Integrated Banking System	o	o	o	o	o	646
RMS-7	o	●	o	o	o	134
Safe Deposit Boxes Billing	o	o	o	●	o	136
Safe Deposit System	o	o	o	o	●	648
Suspense Ledgers	o	o	o	o	o	137
TECHSCORE	o	o	o	o	o	650
TMS (Trust Management System)	o	●	o	o	o	650
Bar coding						
AIM (Automatic Inventory Management)	o	o	●	o	o	368
Bar-Coded Systems	o	o	o	●	o	800
BCP (Barcode/Block Character Plotter)	o	o	●	o	o	674
DB*SCAN	o	●	o	o	o	234
Fixed-Asset Control	o	o	o	o	o	551
Inventory	o	o	o	●	o	386
Log and Lumber Inventory Systems	o	o	o	●	o	424
Manufacturing Systems	o	o	o	●	o	1019
MMS-R Radio-Dispatched Material Management System	o	o	●	o	o	1023
Production Control Systems	o	o	o	●	o	405
Shop Floor Control Systems	o	o	o	●	o	407
ULISYS	o	●	o	o	o	957
Who's Got the File?	o	●	o	o	o	1111
Zip-Man™	●	o	●	●	o	419
Zip-Pick™ Warehouse Automation System	o	o	●	o	o	419
Zip-Stock™	●	o	●	●	o	420
Bill of materials						
6600 Plant Management System	o	o	●	o	o	978
AIMS (Advanced Integrated Manufacturing Systems)	o	o	o	o	o	983
Bill of Materials	o	●	●	o	o	988
BOMP (Bill of Material Processor), MCBA, Inc.	o	●	●	●	o	989
C-11 Materials Management	●	●	●	●	o	989
Concept Data Base Control — Materials	o	●	o	o	o	995
Concept Material Requirements Planning	o	●	o	o	o	996
DTRO BOMP (Bill of Materials Processor) System	o	●	●	o	o	377
DTRO CDMS (Comprehensive Distribution Management System)	o	●	●	o	o	377
Estimating System	o	o	o	●	o	218
FACS — Inventory and Order Entry	o	●	o	o	o	382
Format International Feed Formulation Systems	●	o	●	o	o	153
H-MRP	o	o	o	o	●	1008
PACKET: Bill of Materials for Manufacturing	o	●	o	●	o	1030
Perspective/700 Bill of Materials System	o	●	o	o	o	1031
Perspective/700 Inventory Management	o	●	o	o	o	399
Pioneer COMMAND Bill of Materials Processor Module	o	o	o	o	o	1033
PRINCE (Production Information Center)	o	o	●	o	o	1037

	P/OS	R/ST	R/SX	RT-11	ULTRIX-11	Page
TEC Manufacturing System	○	○	○	○	○	1059
Zip-Stock™	○	○	○	○	○	420
Billing						
Accountant II Order Entry System	○	○	○	○	○	367
Accountant's Time and Billing System	○	○	○	○	○	10
Accounts Payable	○	○	○	○	○	13
Accounts Payable and Cash Disbursements Package	○	○	○	○	○	19
Accounts Receivable	○	○	○	○	○	21
Accounts Receivable	○	○	○	○	○	23
Accounts Receivable and Statement Generation	○	○	○	○	○	27
Accounts Receivable Status	○	○	○	○	○	1180
Accounts Receivable/Billing	○	○	○	○	○	28
AdA — Advertising Agency System	○	○	○	○	○	1064
AGGDISS	○	○	○	○	○	214
AiM™ Receivables and Billing System	○	○	○	○	○	31
AISCorp. Medical Management Systems	○	○	○	○	○	734
Apex Home Health Management System	○	○	○	○	○	735
APPGEN Accounts Receivable	○	○	○	○	○	35
APPGEN Professional Time Reporting	○	○	○	○	○	616
ARCHON: BILLS	○	○	○	○	○	431
ARSAP: Resource Management and Chargeback System	○	○	○	○	○	179
Bacteriology Module: Leadership Series™	○	○	○	○	○	736
BARCS	○	○	○	○	○	1180
Billing and Accounts Receivable System	○	○	○	○	○	737
Blood Bank Module: Leadership Series™	○	○	○	○	○	737
Broadcast Management	○	○	○	○	○	1065
CAS.3 (Accounts Receivable)	○	○	○	○	○	48
Circulation Management	○	○	○	○	○	1065
CLASS — Education Billing and Receivables System	○	○	○	○	○	437
Clinical Support Systems: Leadership Series™	○	○	○	○	○	744
CMS (Cable Television Management System)	○	○	○	○	○	1066
COLTS (Computerized On-Line Transportation System)	○	○	○	○	○	1418
Commercial Property Management	○	○	○	○	○	1195
Commercial/Residential Property Management	○	○	○	○	○	1196
COMPCARE (Comprehensive Care Centers)	○	○	○	○	○	746
Contractor Cost Accounting System	○	○	○	○	○	216
COP (Customer Order Processing), MCBA, Inc.	○	○	○	○	○	998
COSAS (Comprehensive On-Line Student Accounting System)	○	○	○	○	○	441
CPA Time and Billing	○	○	○	○	○	55
DDP OEIF (Order Entry/Invoicing)	○	○	○	○	○	58
DDP PAR (Accounts Receivable)	○	○	○	○	○	59
Dialysis Clinic Billing	○	○	○	○	○	750
Doctor Billing	○	○	○	○	○	751
Easypost Insurance Agency Management System	○	○	○	○	○	846
Episodic Billing System	○	○	○	○	○	752
Equipment Cost	○	○	○	○	○	218
EQUUS-11	○	○	○	○	○	151
EUBA (Electrical Utility Billing and Accounting)	○	○	○	○	○	1183
EVANAC — Project Accounting System	○	○	○	○	○	186
FACS — Newspaper Circulation and Accounts Receivable	○	○	○	○	○	1068
FIFO: FIFO Inventory	○	○	○	○	○	68
FMS (Fleet Management System)	○	○	○	○	○	1184
Fuel Company System	○	○	○	○	○	384
Fuel Oil Accounting/Delivery Scheduling	○	○	○	○	○	384
GALEN — Complete Medical Office System	○	○	○	○	○	754
HDS/II (Healthcare Data Systems)	○	○	○	○	○	756
Healthcare	○	○	○	○	○	756

	P/OS	R/ST	R/SX	RT-11	ULTRIX-11	Page
Home Health Management	○	○	●	○	○	757
Housing Authority Tenant Accounting	○	○	○	○	○	1197
Insurance Agency (Casualty)	○	●	○	○	○	847
INTFIN (Internal Financing Package)	○	●	○	○	○	638
IOI: Order Entry	○	○	●	○	○	93
JSI/MIS (John Snow, Inc./Medical Information System)	○	○	○	○	●	762
KRONIX-11™	○	○	○	○	○	947
KRONIX-PC™	○	○	○	○	○	948
Laboratory Module: Leadership Series™	○	○	○	○	○	763
LABPlus (Laboratory Information System)	○	○	●	○	○	764
Laundry Module: Leadership Series™	○	○	○	○	○	764
Law Firm Management System	○	●	○	○	○	948
Legal Time and Billing System	○	●	○	○	○	949
MAILHOUSE™	○	●	○	○	○	1410
Management Program 1000®	○	○	●	○	○	950
MANEX (Manpower Expenditure Recording)	○	●	●	○	○	965
Manufacturer Order Processing	○	●	○	○	○	1018
MDS (Medical Data System)	○	●	○	○	○	767
Medical Billing and Accounts Receivable	○	○	○	○	○	768
Medical Laboratory System	○	●	○	○	○	768
MEDICOMS (Medical Office Receivables Management System)	○	●	○	○	○	770
MEDISYS	○	○	●	○	○	771
MESTAMED	○	●	○	○	○	772
MODS (Manus Oil Dealer System)	○	○	●	○	○	392
MOSTE (Management of System Telephone Expenses)	○	●	○	○	○	1185
MPMS (Medical Practice Management System)	○	○	○	●	○	773
NFC Professional Accounting	○	●	○	○	○	102
Order Entry and Inventory	○	○	●	○	○	104
Order Entry System	○	●	○	○	○	395
Order Entry/Invoicing	○	○	○	○	○	395
Order Processing System	○	○	○	○	○	397
PAIS (Patient Accounting and Information System)	○	●	○	○	○	776
Paramedics Billing	○	○	○	○	○	776
PARS: Professional Time, Billing A/R	○	○	○	○	○	106
Pathology Billing	○	●	○	○	○	778
Patient Management System	○	○	○	○	○	779
PBS (Produce Brokerage System)	○	○	●	○	○	156
Perspective/700 Accounts Receivable	○	○	○	○	○	116
Pharmacy	○	○	○	○	○	780
Pharmacy Module: Leadership Series™	○	○	○	○	○	781
Physician Systems	○	○	○	○	○	781
Pioneer COMMAND Sales Order Processing Module	○	○	○	○	○	403
POMS (Professional Office Management System)	○	○	●	○	○	951
Practice Management	○	○	○	○	○	970
Practice Management System	○	○	○	○	○	782
PRN-1 Pharmacy Package	○	○	○	○	○	783
Produce Distribution System	○	○	○	○	○	156
PTB (Professional Time and Billing)	○	○	○	○	○	131
RABBIT-1 Resource Accounting, Auditing, and Billing System	○	○	●	○	○	194
Radiology Accounts Receivable Management System	○	○	○	○	○	785
Radiology Billing	○	○	○	○	○	785
RBS (Radiology Billing System)	○	○	○	○	○	786
RCC Billing/Inventory System	○	○	○	○	○	1186
REA Accounting Software	○	○	○	○	○	1187
RECAP	○	○	○	○	○	665
Rental Service System	○	○	○	○	○	1253
Residential Property Management	○	○	○	○	○	1202
RXS (Pharmacy System)	○	○	○	○	○	787

1490 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Safe Deposit Boxes Billing	○	○	○	●	○	136
TBS Order Entry System with Inventory Control, Billing, and Sales Analysis	○	●	●	●	○	410
TBS Time Accounting for Professionals	○	○	○	○	●	1176
Telephone Accounting and Billing System	○	○	○	○	●	1187
Temporary Nursing Personnel Agency System	○	●	○	○	○	790
Third-Party Claim Payment and Billing System	○	○	○	○	○	791
TIMANA-IMPRS Time-Analysis System	○	●	●	●	○	1177
Time and Billing	○	○	○	○	●	973
Time Management	○	○	○	○	○	974
Time Management and Billing	○	○	○	○	○	140
Timeline Accounts Receivable	○	●	○	○	○	141
TIMETRACK: Project Time Accounting	○	○	○	○	●	1177
Utility-11	○	○	○	○	●	1189
VET-11	○	○	○	○	○	792
Wholesale/Liquid Product Inventory	○	●	○	○	○	415
Wholesaler's Software System	○	●	○	○	○	416
Biology						
Bacteriology Module: Leadership Series™	○	○	○	○	○	736
DATAIN	○	○	○	○	●	1210
European MINC Package #3 — Data Acquisition	○	○	○	○	○	237
European MINC Package #5 — Data Analysis	○	○	○	○	○	1211
EXP1234 (Exponential Model Fitter)	○	○	○	○	●	494
FISH: Post- and Interspike Interval Analysis	○	○	○	○	○	1212
GALEN — Complete Medical Office System	○	○	○	○	○	754
HTP (Hemodynamic Tracking Profile)	○	○	○	○	○	759
Laboratory Module: Leadership Series™	○	○	○	○	○	763
MCSIM (Monte Carlo Simulation)	○	○	○	○	○	511
OSS (Optimal Sampling Schedule Designs)	○	○	○	○	○	1221
RKLIN (Linear System Simulation: Runge-Kutta)	○	○	○	○	○	526
SDP-PLUS (Structure Determination Package)	○	○	○	○	○	1225
Sunquest Laboratory System	○	○	○	○	○	790
Broadcasting						
Barter	○	○	○	○	○	1064
Broadcast Management	○	○	○	○	○	1065
CMS (Cable Television Management System)	○	○	○	○	○	1066
Person System	○	○	○	○	○	1070
Sampler	○	○	○	○	○	1071
Selector	○	○	○	○	○	1072
Storm Center	○	○	○	○	○	1072
Television Operations Systems	○	○	○	○	○	1073
CAD/CAM						
APPS/2 (Automatic Part Programming System, Version 2)	○	○	○	○	○	984
AWRAP (Wire Wrapping for GD Fully Automatic Machines)	○	○	○	○	○	987
BRG (Bearing Life Calculations)	○	○	○	○	○	471
C-DASS (Computer Distribution and Storage System)	○	○	○	○	○	990
CADBIRD II	○	○	○	○	○	474
CalComp Host Computer Basic Software (On Line/Off Line)	○	○	○	○	○	675
CALDGN (CalComp to Design File) Interface Library	○	○	○	○	○	675
CALSIF (CalComp to Standard Interchange Format) Interface Library	○	○	○	○	○	676
CAM-TECH	○	○	○	○	○	990
CCSI-PLOT®	○	○	○	○	○	676
CDIG — Graphics Digitizing Program	○	○	○	○	○	476
CELLO — A Cell Organization Utility	○	○	○	○	○	677
Civil Library	○	○	○	○	○	478

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
CODE (Computer-Oriented Drafting Equivalent)	o	●	●	●	o	678
CPLOT — Graphics Plotter Program	o	●	o	o	o	484
CSM/O/P (Continuous System Modeling and Optimizing Program)	o	o	●	o	o	486
Design Graphix™	●	o	●	●	o	489
DNC-11 (Direct Numerical Control Package)	o	o	o	o	o	1000
DUCTSYS — HVAC Ductwork and Fittings Drawing System	o	o	●	o	o	683
EDIGRAF — Batch Edit for Intergraph Design Files	o	o	●	o	o	684
ELAN-AC	o	o	●	o	o	491
EQUINOX™	o	o	●	●	o	1003
EVANAC — Project Accounting System	o	o	●	o	o	186
FPS (Fundamental Plotting Subroutines)	o	o	●	●	o	496
Functional Subroutines	o	o	●	●	o	496
GDL (Graphic Display Library)	o	o	●	o	o	688
Gear	o	●	●	●	o	688
GEARW	o	●	●	●	o	497
GINTRAN (Graphics Input and Transformation)	o	o	●	●	o	691
GKS-GRAL	o	o	●	o	o	692
GPR (Graphics Plotting Routines)	o	o	●	o	o	693
GPUC (General-Purpose User Command Package)	o	o	●	o	o	497
Grid	o	●	●	●	o	498
HATCH — Crosshatching	o	●	●	●	o	694
Holes	o	●	●	●	o	501
Hoop	o	●	●	●	o	501
I/CAP (Interactive Electronic Circuit Analysis Program)	o	o	●	o	o	503
ICLAYOUT	o	o	●	●	o	503
I/LOGIC (Interactive Logic Simulation)	o	o	●	o	o	504
LDAT (Logic Design Automation Terminal)	o	o	●	o	o	508
LIB.FOR Library Routines	o	o	●	●	o	291
MAESTRO	o	o	●	o	o	1018
MOSFIT (MOS Transistor Model Parameter Extraction Package)	o	o	●	●	o	512
NC Tape Verification for Manufacturing Operations	o	o	●	●	o	1025
NCL — Interactive Graphics Software	o	o	●	o	o	1025
NCNET	o	o	●	●	o	1026
NCTAPE (Numerical Control Tape Processing System)	o	o	●	o	o	1027
NUFORM Level I	o	o	●	o	o	1028
NUFORM Level II	o	o	●	o	o	1028
OMNICONTR0L® and OMNIPREP®	o	o	o	o	o	1029
OPTAN (Optical Systems, Evaluation, and Analysis)	o	o	●	o	o	516
PALETTE™: Computer-Aided Drafting and Design	●	o	●	o	o	705
PIPESYS — Double-Line Piping Drawing System	o	o	●	o	o	707
Real-Time Production Monitoring System	o	o	●	●	o	1049
Rhintek Plot Package	o	●	●	●	o	719
RUCAPS (Really Universal Computer-Aided Production System)	o	o	●	o	o	526
SDM (Symbolic Drawing Machine)	o	o	●	o	o	724
Shaft: Stress Calculations	o	●	●	●	o	530
STAG II Drawing System	o	o	o	o	●	727
STRINGS (Storage and Retrieval Information Graphics)	o	o	o	●	o	728
Structural Member Analysis Programs	o	o	o	o	o	538
TAPEIA	o	●	●	●	o	540
VANGO	o	●	o	o	o	544
Wall	o	●	●	●	o	732
WWRAP (Wire Wrapping for Semiautomatic Machines)	o	●	●	●	o	1062
Calculation aids						
ABACUS	o	o	o	o	●	430
ADR/DATA™	●	o	o	o	o	796
ALGEB: A Language for Algebra and Number Theory	o	o	o	o	o	856
BRG (Bearing Life Calculations)	o	●	●	●	o	471

1492 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
C-11 Accounts Receivable	●	●	●	○		41
C-11 Mortgage Banking I	●	●	●	○		620
C301A	○	●	○	○		472
CAI (Computer-Assisted Instruction Package)	○	●	○	○		434
CALC (Accounting Calculator), Version II	○	●	○	○		1080
CALC: An Interactive Computer Language with Unlimited Numerical Precision	○	○	○	●	○	1208
Canadian Mortgage Calculation Program	○	○	○	○		622
CAPS — Section Properties Program	○	○	○	○		475
CBUMP — Automotive Bumper Dynamic Impact	○	●	○	○		475
CHARGER	○	●	○	○		742
CHEM-COST	○	○	○	○		991
Cobra	○	○	●	○		214
Cortex Desk Set™	●	○	○	○		1082
COSAP™ (Con conversationally Oriented Statistical Analysis Package) ...	○	●	○	○		484
Cost Estimating	○	○	○	○		1232
Country Club Golf Handicapping System	○	●	○	○		166
CRPLT	○	○	○	○		485
CSEAT — Seat Frame Analysis Code	○	○	○	○		486
DATMAN (BASIC Data Manipulation Package)	○	○	○	○		807
Depreciation Schedule	○	●	○	○		61
DIBOL Subroutines	○	○	○	○		275
Elliptic Integrals and Functions	○	○	○	●		1211
FEED-MAN Ration Preparation	○	○	●	○		152
Fixed Asset Accounting	○	○	○	○		69
FLIP: A Computer Program for Fuzzy Reasoning	○	○	○	●		168
FOCAL RT	○	○	○	○		882
Gamma Spectroscopy Applications Package	○	○	●	○		1214
GENSIM-IMPRS Financial Simulator	○	○	●	○		635
Grade Book	○	●	○	○		445
Grade Reporting	○	○	○	○		445
GRADES (Grading, Recording, and Analyzing Diverse Evaluations of Students)	○	○	○	●	○	446
HomeRange	○	○	○	○		154
Hoop	○	●	●	○		501
HTP (Hemodynamic Tracking Profile)	○	○	○	●		759
INTRST.PKG	○	○	○	○		638
Laboratory Applications-11 Library	○	○	○	○		1217
LazerCalc	○	○	○	●		240
Loads	○	○	○	○		509
LSP-11 (Laboratory Subroutine Package)	○	○	○	●		1217
Matrix Routines	○	○	○	○		297
Matrix Subroutines	○	○	○	○		298
MICRO FEED	●	○	○	○		155
NONLIN (Nonlinear Least-Squares Curve-Fitting Program)	○	○	○	○		514
NORTON (Astronomical Ephemeris Program Package)	○	●	○	○		1221
On-Line Share Registration	○	○	○	○		641
PICALC: Lifetime Earnings Estimation	○	○	○	○		951
PLANIT (Programming Language for Interactive Teaching)	○	○	○	○		453
Plessey-CALC	○	●	●	○		1098
PORTACALC (AnalytiCalc): A 3-D Spreadsheet/Data Base System in VMS/BACKUP	○	●	○	○		831
PORTACALC XL: Floppy Version	○	○	○	○		832
PORTACALC/AnalytiCalc: A 3-D Spreadsheet/Data System	○	○	○	○		832
Project Delta, Section B: Statistics	○	○	○	○		519
ProtoCall 1000™	●	○	○	○		834
PSYCHROM: A Calculating Psychrometric Properties Program	○	○	○	○		1222
Q-MATH	○	○	○	○	●	1102

	PDS	RST	RSX	RT-11	ULTRIX-11	Page
RES	○	○	●	○	○	524
RSX-11 BASIC	○	○	○	○	○	932
RT-11 System Utilities MAPP, FIND, and GRAB	○	○	○	○	○	250
SATURN-CALC™ Electronic Spreadsheet	●	●	●	○	○	648
SPEAKR: Vented-Box Speaker Enclosure Calculator	○	○	○	○	○	1348
Square Root Routine for Integers	○	○	●	○	○	534
STRESS-11: A Structural Analysis Program	○	○	○	○	○	537
Synergy	●	○	○	○	○	1164
Task Image Zapper and Other Goodies	○	○	○	○	○	349
TTEST	○	○	○	○	○	541
USERBASICS	●	○	○	○	○	358
Utility Routines for a PDP-11/45 with a Floating-Point Processor	○	○	●	○	○	543
Chemical						
AIM Batch (Automated Industrial Monitoring)	○	○	○	○	○	982
ATOMS (Advanced Textile Operations Management Systems)	○	○	○	○	○	985
AUTO-CHEM	○	○	○	○	○	468
Automated Powder Diffraction Data Collection and Analysis	●	○	○	○	○	1208
BDARE: Dynamic-System Simulation in BASIC	○	○	○	○	○	469
CHEM-COST	○	○	○	○	○	991
CHROM (Chromatography Graphics and Analysis)	○	○	○	○	○	1208
CHROMPAK (Chromatography Analysis Package)	○	○	○	○	○	1209
CO-LAB	○	○	○	○	○	745
CPCS-I (WECOM Computer Process Control System)	○	○	○	○	○	999
DESIRE (Direct-Executing Simulation in Real Time)	○	○	○	○	○	489
DOSRES (Quantal Dose-Response Analysis)	○	○	○	○	○	752
FLIC	○	○	○	○	○	494
ISL (Interactive Simulation Language)	○	○	○	○	○	507
Laboratory Applications-11 Library	○	○	○	○	○	1217
Neutron Activation Analysis	○	○	○	○	○	1220
Process Supervisory Control	○	○	○	○	○	426
QMS PROGRAMS® Computer Software/Product Shelf Life and Stability	○	○	○	○	○	1046
RADIO-OSCAR	○	○	○	○	○	784
SDP-PLUS (Structure Determination Package)	○	○	○	○	○	1225
TIP (Tankage Inventory and Yields Programs)	○	○	○	○	○	426
CIM						
G-Post (Generalized Postprocessor)	○	○	○	○	○	1005
PEPS (Production Estimating and Planning System)	○	○	○	○	○	1031
RSX-620 (IPC 620 CIM to RSX-11M/M-PLUS Communications Support Package)	○	○	○	○	○	1050
UCC/CAM 100	●	○	○	○	○	1061
Civil engineering						
Action List	○	○	○	○	○	960
ANKOR	○	○	○	○	○	468
BFTHK	○	○	○	○	○	469
BONDJT	○	○	○	○	○	470
BOUSQ (Boussinesq)	○	○	○	○	○	470
BOXCUL (Box Culvert)	○	○	○	○	○	470
C300	○	○	○	○	○	471
C301A	○	○	○	○	○	472
C301B	○	○	○	○	○	472
C302	○	○	○	○	○	473
C303	○	○	○	○	○	474
Chanel	○	○	○	○	○	477
Civil Library	○	○	○	○	○	478
COGO (Coordinate Geometry)	○	○	○	○	○	481

1494 Keyword Cross-Reference Guide

	P/O	RST	FSX	RT-11	ULTRIX-11	Page
Cones	○	●	○	○	○	483
COORD	○	○	○	○	○	483
CPM (Critical Path Method)	○	●	○	○	○	217
CRPLT	○	○	○	○	○	485
DLOAD	○	○	○	○	○	490
Drawing Register	○	○	○	○	○	682
Elbow	○	○	○	○	○	493
Estimating System	○	○	○	○	○	218
FLGTHK	○	○	○	○	○	494
Gasket	○	○	○	○	○	497
GROUSE Ground Modeling System	○	○	○	○	●	498
Hammer	○	○	○	○	○	499
HBOLTS	○	○	○	○	○	499
HEC 1: Runoff Hydrographs	○	○	○	○	○	500
HEC 2: Backwater Profiles	○	○	○	○	○	500
HSULF (Hydrogen Sulfide)	○	○	○	○	○	501
INTEREST (Interactive Estimating)	○	○	○	○	○	220
Lambert Geodetic Conversion	○	○	○	○	○	507
Loads	○	○	○	○	○	509
M11 PIPE	○	○	○	○	○	510
MBP (Metal Building Program)	○	○	○	○	○	510
MOFI	○	○	○	○	○	512
Network	○	○	○	○	○	514
NEUPAN (Neutral Point Analysis)	○	○	○	○	○	514
Offset	○	○	○	○	○	515
OLANDR	○	○	○	○	○	516
Outlet	○	○	○	○	○	516
PALETTE™: Computer-Aided Drafting and Design	○	○	○	○	○	705
Paris	○	○	○	○	○	517
PCM (Project Cost Model)	○	○	○	○	○	968
PIPCOS	○	○	○	○	○	517
Pipeline Layout #6000	○	○	○	○	○	518
PLDATA	○	○	○	○	○	519
PRODAT (Project Day Computation)	○	○	○	○	○	223
RCPULT	○	○	○	○	○	522
REVR4	○	○	○	○	○	525
REWALL (Retaining Wall Design)	○	○	○	○	○	525
SDRC® FATIGUE™	○	○	○	○	○	529
SIZEB	○	○	○	○	○	531
SIZEE	○	○	○	○	○	531
SIZEP	○	○	○	○	○	532
SIZET	○	○	○	○	○	533
Span	○	○	○	○	○	534
SPIPE (Circular Pipe Analysis)	○	○	○	○	○	534
STAG II Drawing System	○	○	○	○	○	727
Stress	○	○	○	○	○	536
STRESS (Structural Engineering Solver)	○	○	○	○	○	537
SURVEY: Data Reduction and Plotting for Surveyor's Field Data	○	○	○	○	○	539
UDAP (Urban Drainage Analysis Package)	○	○	○	○	○	542
Ultima	○	○	○	○	○	542
USBRJT	○	○	○	○	○	543
VANGO	○	○	○	○	○	544
WATDIS (Water Distribution System Analysis)	○	○	○	○	○	545
Wood Beam Check	○	○	○	○	○	546
WTCOAT	○	○	○	○	○	546
Compilers						
80/DS (PL/M-80) (Development System)	○	○	○	○	○	854

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
86/PC (PL/M-86) Compiler	○	○	○	○	●	854
AIS-PL/I Compiler	●	●	○	○	○	855
ALGOL for RT-11	○	○	○	○	○	856
Amsterdam Compiler Kit	○	○	○	○	●	259
AVL	○	○	○	○	●	859
BACOMP (Pseudocompiler for RT-11/BASIC)	○	○	○	○	●	859
BASIC-11/RT-11	○	○	○	○	○	861
BASIC-L	○	○	○	○	●	861
BASIC, Pascal, PortaCalc, Kermit, and a Desk Top Calendar	●	○	○	○	○	261
BASIC-PLUS-2 for RSTS/E	○	●	○	○	○	862
BASIC-PLUS-2 for RSX-11M and RSX-11M-PLUS	○	○	○	○	○	863
BASTOC™ (BASIC to C)	○	○	○	○	○	864
BOS/MicroCobol	○	○	○	○	○	864
BSO/C Compiler	○	○	○	○	●	262
BSO/Pascal Compiler	○	○	○	○	○	264
BSO/PLM Compiler	○	○	○	○	○	265
C Language System (Binary Version) for the Professional 300	○	○	○	○	○	865
C Language System for RT-11 (Binary Version)	○	○	○	○	○	866
C Language System in RT-11 Format	○	○	○	○	○	866
C Language System, Second Master Release	○	○	○	○	○	867
C Language System with Native Toolkit	○	○	○	○	○	868
C Native and Cross-Compilers	○	○	○	○	○	868
C Test Suite	○	○	○	○	○	868
C68	○	○	○	○	○	869
CDL2 Compiler	○	○	○	○	○	870
COBOL	○	○	○	○	○	871
COBOL-81/RSTS/E	○	○	○	○	○	871
COBOL-81/RSX	○	○	○	○	○	872
COBOL-Plus	○	○	○	○	○	873
DBL (Data Business Language)	○	○	○	○	○	874
DBMS-11	○	○	○	○	○	807
DDC/PPCL Compiler — System 600	○	○	○	○	○	875
EXPAND	○	○	○	○	○	880
FILETAB-D	○	○	○	○	○	280
FORTH: Programming System	○	○	○	○	○	1213
FORTTRAN-77 and BASIC Runtime Units	○	○	○	○	○	284
FORTTRAN-77 Compiler	○	○	○	○	○	883
FORTTRAN-77/IAS	○	○	○	○	○	883
FORTTRAN-77/RSTS/E	○	○	○	○	○	884
FORTTRAN-77/RSX	○	○	○	○	○	885
FORTTRAN-77/RT-11	○	○	○	○	○	886
FORTTRAN Interface to IAS Subtasking	○	○	○	○	○	886
FORTTRAN IV/IAS	○	○	○	○	○	887
FORTTRAN IV/RSTS/E	○	○	○	○	○	887
FORTTRAN IV/RSX	○	○	○	○	○	888
FORTTRAN IV/RT-11	○	○	○	○	○	889
FORTRIX-C (FORTRAN to C Translator)	○	○	○	○	○	889
HCR/Pascal	○	○	○	○	○	890
HOL77 Precompiler for DIGITAL's FORTRAN-77	○	○	○	○	○	891
IFTRAN Precompiler for PDP-11 FORTRAN	○	○	○	○	○	891
LALR (1) Parser Constructor to Translate Computer Languages	○	○	○	○	○	893
LISP11 for RSTS	○	○	○	○	○	894
LISP11 for RT-11	○	○	○	○	○	895
M/11+	○	○	○	○	○	1123
M6800/01/05/09 Cross-Software Packages	○	○	○	○	○	293
MAGIC/L™	○	○	○	○	○	903
MARGOT: A MACRO-Based Generator of Command Language Interpreters	○	○	○	○	○	904

1496 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Micro Concurrent Pascal (mCP) Cross-Compiler	○	○	●	●	○	904
Microbench C Cross-Compiler for the Intel 8086/8087/8088	○	○	○	○	●	309
MicroPower/Pascal-Micro/RSX	○	○	○	○	○	315
MicroPower/Pascal-RSX	○	○	●	○	○	315
Micro/RSTS BASIC-PLUS-2	○	●	○	○	○	906
Micro/RSTS COBOL-81	○	○	○	○	○	906
Micro/RSTS FORTRAN-77	○	●	○	○	○	907
Micro/RSX BASIC-PLUS-2	○	○	●	○	○	907
Micro/RSX COBOL-81	○	○	○	○	○	908
Micro/RSX DIBOL	○	○	●	○	○	909
Micro/RSX FORTRAN-77	○	○	○	○	○	909
Micro/RSX PDP-11 Pascal	○	○	○	○	○	910
Modula-2/RSX	○	○	●	○	○	911
Pascal-2™	●	●	●	○	○	914
Pascal Compiler	○	○	○	○	○	915
Pascal Native and Cross-Compilers	●	●	●	●	●	915
Pascal-xii	○	○	●	○	○	916
Pascal/RSX	○	○	○	○	○	917
PEP (Program Editor and Processor) Programming System	○	○	○	○	○	918
PL-11: High-Level Assembler Language	○	○	○	○	○	918
polyFORTH II	○	○	○	○	○	1132
PRO/BASIC	●	○	○	○	○	921
PRO/COBOL-Plus™	○	○	○	○	○	921
Professional CTS-300	○	○	○	○	○	1133
Professional Host Tool Kit	○	○	○	○	○	922
Professional Host Tool Kit COBOL-81	○	○	○	○	○	923
Professional Host Tool Kit DIBOL	○	○	○	○	○	923
Professional Host Tool Kit FORTRAN-77	○	○	○	○	○	924
Professional Host Tool Kit Pascal	○	○	○	○	○	925
PRO/Tool Kit BASIC-PLUS-2	●	○	○	○	○	925
PRO/Tool Kit COBOL-81	●	○	○	○	○	926
PRO/Tool Kit DIBOL	●	○	○	○	○	926
PRO/Tool Kit FORTRAN-77	●	○	○	○	○	927
PRO/Tool Kit FORTRAN-77 DEBUG	○	○	○	○	○	328
PRO/Tool Kit Pascal	●	○	○	○	○	928
PRO/VENIX™ Software Development Kit	○	○	○	○	○	329
RPG II	○	●	○	○	○	930
RSTS/E DIBOL	○	○	○	○	○	932
RSTS/E INDENT	○	○	○	○	○	1388
RSX-11M-PLUS DIBOL	○	○	○	○	○	933
RSX-11M/FORTRAN Enhancement Package for MINC	○	○	○	○	○	1141
RSX-11M/FORTRAN Real-Time Package for MINC	○	○	○	○	○	1142
RT-11/FORTRAN Enhancement Package for MINC (FEP)	○	○	○	○	○	1144
RT-11/FORTRAN Real-Time Package for MINC (FRP)	○	○	○	○	○	1145
RTEM-11 (RT-11 Emulator for RT-11, Version 5.1)	○	○	○	○	○	334
RTEM-11 (RT-11 Version 5.2 Emulator for RSX)	○	○	○	○	○	335
RT/EMT (RT-11 Emulator)	○	○	○	○	○	1146
RTL/2 (Real-Time Language)	○	○	○	○	○	935
S-TRAN™ BASIC to C Translator	○	○	○	○	○	335
The Safe C Runtime Analyzer™	○	●	●	●	●	935
Safe C Statement-Level Profiler™	○	●	●	●	●	336
SIBOL (Software Ireland Business-Oriented Language)	○	○	○	○	○	938
SOFTBOL	○	○	○	○	○	939
SUPERMAX	○	●	●	●	●	941
TRAMP for RSX-11 and RT-11	○	○	○	○	○	353
UCSD Pascal® Compiler	○	○	○	○	○	941
UNIFORTH	○	○	○	○	○	942
UNITAP/UNIWRI	○	○	○	○	○	253

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
UNITY Operating Systems	o	o	o	o	o	1155
UNIX* System Tutorials	o	o	o	o	o	465
Vandata Z80 C Cross-Compiler	o	o	●	o	o	942
VT55 FORTRAN-Callable Functions	o	o	●	o	o	732
WATBOL-11 Compiler	o	●	●	o	o	943
WATFOR-77 Compiler	o	●	●	o	o	944
X-TOOLS	o	o	●	o	o	361
Computer-aided instruction						
AVID	●	o	●	●	o	433
CAI (Computer-Assisted Instruction Package)	o	●	o	o	o	434
CASANOVA (Computer-Assisted Instruction in Analysis of Variance)	o	●	o	o	o	435
CAST* (Computer-Assisted Self-Training)	o	o	o	o	o	435
Compendium of (DECAL) CAI Programs	o	●	o	o	o	440
DECAL (Digital Equipment Corporation Author Language)	o	●	o	o	o	442
DECWORD/DP and DECWORD for Micro/RSTS	o	●	o	o	o	1085
Demonstrator	o	●	o	o	o	808
DOC	o	●	o	o	o	1373
Dolphin® Curricula	o	●	o	o	o	442
ENGDRIL (English Drill) Package	o	●	o	o	o	443
Engineering Science Program Exchange	o	o	●	o	o	443
European MINC Package #2 — Lab Management	o	o	o	●	o	753
Framer	o	●	o	o	o	1379
GIGI CAI Primer	o	●	o	o	o	689
GIS* (Guidance Information System)™	o	●	o	o	o	444
INRAN, OUTRAN: Computerized Question Generation #2	o	●	o	o	o	447
Logo for the Professional 300	●	o	o	o	o	449
PLANIT (Programming Language for Interactive Teaching)	o	o	●	o	o	453
QUEST, Standard MUMPS Teaching Program, and DOC	o	o	o	o	o	454
ReGIS CAI Primer	o	●	o	o	o	718
Riverdale Math Package	o	●	o	o	o	455
School Instructional Packages	o	●	o	o	o	459
SofTeach® for UCSD Pascal®	o	o	o	o	o	462
SR/SE II (Survey of Reading/Study Efficiency)	o	●	o	o	o	462
Tutor	o	●	o	o	o	464
TUTR: BASIC Tutoring Programs	o	●	o	o	o	464
UNIX* System Tutorials	o	o	o	o	o	465
Computer operations						
Arabic PRO/Installation and Maintenance	o	o	o	o	o	1114
File Manipulation Commands	o	o	o	●	o	573
Idris™ Operating System	o	o	o	o	o	1122
LOGOUT: RSX-11 Remote Terminal Logout	o	o	●	o	o	1323
M/APS (Menu/Authorization Processor System)	o	●	o	o	o	296
PRO-2780/3780 Communications Applications	●	o	o	o	o	1333
PRO-CP/M® -80	●	o	o	o	o	1133
PRO/Office Workstation	●	o	o	o	o	1099
RDSEDT (RSTS Disk Structure Editor)	o	●	o	o	o	589
RSTS System Utilities from the University of Tennessee	o	o	o	o	o	1136
SHARE-eleven	o	o	o	●	o	1148
Student Terminal Management System	o	●	o	o	o	464
USX51 8051 Operating System	o	o	o	●	o	1156
USX86 8086 Operating System	o	o	o	●	o	1156
USX96 8096 Operating System	o	o	o	●	o	1156
Construction						
FCI Building and Zoning System	o	●	o	o	o	655
PCM (Project Cost Model)	o	●	●	●	o	968
RUCAPS (Really Universal Computer-Aided Production System)	o	o	●	o	o	526

1498 Keyword Cross-Reference Guide

	P/Os	RSTS	RSX	RT-11	ULTRIX-11	Page
UDS General Ledger Accounting	○	○	○	●	○	147
VUE	○	●	●	●	○	975
Cost accounting						
Abax Depreciation System	○	●	○	●	○	7
ABC/Equipment Data and Repair History System	○	○	●	●	○	1246
ABC/Financial Planning, Modeling, and Reporting System	○	○	●	○	○	613
Accounting, Integrated	○	○	○	○	●	11
Accounts Payable	○	○	●	○	○	12
A/D (Fixed Assets and Depreciation), MCBA, Inc.	○	○	●	○	○	29
AiM™ Payables	○	○	○	○	○	30
AiM™ Payroll — Interactive	○	○	●	○	○	31
AIM/PR (Accounting Information Manager for Payroll with Cost Accounting)	○	○	○	○	○	32
APPGEN Job Cost	○	○	○	○	○	37
APPGEN Professional Time Reporting	○	○	○	○	○	616
ARSAP: Resource Management and Chargeback System	○	○	●	○	○	179
Automatic Business Control System	○	○	○	○	○	370
BAS (Budgetary Accounting System)	○	○	○	○	○	39
Builder (Homebuilders System)	○	○	○	○	○	214
C-11 Job Cost	○	○	○	○	○	44
C-11 Payroll	○	○	○	○	○	44
Casting Costing, Pricing, and Profit Analysis	○	○	○	○	○	962
CHEM-COST	○	○	○	○	○	991
Chronometrix	○	○	○	○	○	962
Complete Accounting Package	○	○	○	○	○	54
Concept Product Costing — Materials	○	○	○	○	○	996
Concept Product Costing — Operations	○	○	○	○	○	997
Constructimate	○	○	○	○	○	215
Contractor Cost Accounting System	○	○	○	○	○	216
Contractor Management System	○	○	○	○	○	216
DDP PAS (General Ledger)	○	○	○	○	○	59
Dialysis Clinic Billing	○	○	○	○	○	750
DOVETAIL JOM (Job-Oriented Manufacturer)	○	○	○	○	○	1001
Equipment Cost	○	○	○	○	○	218
ETAKE 2 (Estimating, Takeoff, and Pricing System)	○	○	○	○	○	219
Evets Accounting Systems	○	○	○	○	○	64
FACS — Job Costing	○	○	○	○	○	219
FACS — Job Order System	○	○	○	○	○	383
FEED-MAN Feed Analyzer	○	○	○	○	○	152
FLEET™	○	○	○	○	○	1420
Flexware Job Costing	○	○	○	○	○	631
GLS (General Ledger System)	○	○	○	○	○	754
HIMS (Hospitality Information Management System)	○	○	○	○	○	1249
ICONS (Integrated Construction System)	○	○	○	○	○	220
INTEREST (Interactive Estimating)	○	○	○	○	○	220
IV-11 Inventory Control System	○	○	○	○	○	221
J/C (Job Costing), MCBA, Inc.	○	○	○	○	○	1015
Job Cost	○	○	○	○	○	221
Job Cost Accounting	○	○	○	○	○	818
Job Costing	○	○	○	○	○	94
Job Costing	○	○	○	○	○	222
Job Costing	○	○	○	○	○	1015
Labor Performance	○	○	○	○	○	1016
Law Firm Management System	○	○	○	○	○	948
Legal Time and Accounting System	○	○	○	○	○	949
MAINSY-IMPRS Preventive Maintenance System	○	○	○	○	○	552
MANEX (Manpower Expenditure Recording)	○	○	○	○	○	965

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Oil Burner Service/Inventory	o	●	o	o	o	1252
Oscar	o	●	●	●	o	1029
PARS: Professional Time, Billing A/R	o	●	o	o	o	106
Perspective/700 Accounts Payable	o	●	o	o	o	116
Perspective/700 Bill of Materials System	o	●	o	o	o	1031
PHENIX PASS	o	●	o	●	o	117
PIC (Parts Inventory Control System)	o	●	●	●	o	401
PIPCOS	o	●	o	o	o	517
PMM/MBS Job Cost System	o	●	o	●	o	969
ProBiz™ Job Costing/Work in Process	o	o	●	o	o	1039
Project Cost Accounting System	o	●	o	o	o	519
Project Delta, Sections G and H: Business and Data Processing	o	●	o	o	o	647
QUOTE: Manufacturing Cost Estimating	o	●	o	●	o	1048
RABBIT-1 Resource Accounting, Auditing, and Billing System	o	●	●	o	o	194
RABBIT-3 System Monitor	o	●	●	o	o	196
RAFT (Revenue Accounting for Truckers)	o	o	o	●	o	1422
Resource Accounting Module	o	●	●	●	o	197
Roger Williams College Collection	o	●	o	o	o	719
School Payroll Package	o	●	o	o	o	459
Shop Floor Control	o	●	●	o	o	1054
SPC (Standard Product Costing), MCBA, Inc.	o	●	●	●	o	1056
Spider II Manufacturing Planning and Control System	o	●	o	o	o	1056
Standard Product Costing	o	●	●	o	o	1058
Standard Product Routing	o	●	●	o	o	1058
Time and Billing	o	o	o	●	o	973
Time Management	o	o	●	●	o	974
TIMETRACK: Project Time Accounting	o	o	o	●	o	1177
TSI JobCost	o	●	●	●	o	225
TSRUAP (A TSX-PLUS™ System Resources Utilization Accounting Package)	o	o	o	o	o	205
VC	o	o	o	o	●	1110
Vehicle Cost and PM	o	o	o	o	o	1256
Vehicle Ledger System	o	●	o	o	o	1190
WIP (Work In Progress)	o	●	o	o	o	147
Work Order System	o	●	o	o	o	1191
Credit						
Accounts Receivable	o	●	o	●	o	23
APPGEN Accounts Receivable	o	o	o	o	o	35
Automated Collection Management	o	o	●	o	o	1408
Banker's Credit Management System	o	●	o	o	o	617
Collection-Plus	o	●	o	o	o	623
Credit Authorization	o	o	●	o	o	1408
Customer Order Processing	o	●	●	o	o	371
Decision Tree	o	o	o	o	o	626
FACS (Flexible Automated Collection System)	o	o	o	o	o	1088
Forced Closed Accounts	o	o	o	●	o	632
GENESYS	o	o	o	o	o	635
NCS (National Creditor System)	o	●	o	o	o	101
Order Entry System	o	o	o	o	o	395
Performance Manager	o	o	o	o	o	642
Perspective/700 Order Processing	o	●	o	o	o	400
PM11 Accounts Receivable	o	●	o	●	o	121
REACT	o	●	o	o	o	1187
RMS-7	o	●	o	o	o	134
Suspense Ledgers	o	o	o	●	o	137
TABS (Total Application for Building Suppliers)	o	●	o	o	o	224
TECHSCORE	o	o	o	o	o	650

1500 Keyword Cross-Reference Guide

	P/Os	RSTS	RISX	RT-11	ULTRIX-11	Page
TSH/CRIS — Credit Insurance Administration	o	o	o	o	o	850
Cross-assemblers						
8008.BAS and 8080.BAS	o	●	o	o	o	854
Amsterdam Compiler Kit	o	o	o	o	●	259
ASM65 — Cross-Assembler for the 6502 Microprocessor	o	o	o	●	o	260
Cross-Assemblers	o	o	o	o	o	270
epsitool:assemble	o	o	o	o	o	278
M-CUBED — Multiple Microprocessor MACRO Cross-Assembler	o	o	●	o	o	293
MACRO-05 MC6805 Cross-Development Tools	o	o	●	●	●	895
MACRO-09 MC6809 Cross-Development Tools	o	o	●	●	●	895
MACRO-65 6502 Cross-Development Tools	o	o	●	●	●	896
MACRO-68 MC68000/10 Cross-Development Tools	o	o	●	●	●	897
MACRO-80 8080/8085 Cross-Development Tools	o	o	●	●	●	897
MACRO-86 8086/8088 Cross-Development Tools	o	o	●	●	●	898
MACRO-8K Z-8000/1/2/3/4 Cross-Development Tools	o	o	●	●	●	898
MACRO-MC MC6800/01/02/03/08 Cross-Development Tools	o	o	●	●	●	899
MACRO-Z8 Z-80 Cross-Development Tools	o	o	●	●	●	901
Microbench 6800 Cross-Assembly Package	o	●	●	o	o	301
Microbench 68000 Cross-Assembly Package	o	●	●	o	o	302
Microbench 6805 Cross-Assembly Package	o	●	●	o	o	303
Microbench 6809 Cross-Assembly Package	o	●	●	o	o	304
Microbench 8021/8035/8048/8748 Cross-Assembly Package	o	●	●	o	o	305
Microbench 8051 Cross-Assembly Package	o	●	●	o	o	306
Microbench 8080/8085 Cross-Assembly Package	o	●	●	o	o	307
Microbench 8086/8087/8088 Cross-Assembly Package	o	●	●	o	o	308
Microbench Z80 Cross-Assembly Package	o	●	●	o	o	313
Microbench Z8000 Cross-Assembly Package	o	●	●	o	o	314
Motorola 68000/10 Cross- and Resident Assembler	o	o	o	o	o	320
MPS Cross-Assembly Programs for RT-11	o	o	o	o	o	912
PAL8XR (PDP-8/Intersil 6100 Cross-Assembler Under RT-11)	o	o	o	●	o	914
SAL Low-Cost Cross-Assemblers	o	o	●	●	o	937
Cross-compilers						
80/DS (PL/M-80) (Development System)	o	o	o	o	●	854
86/PC (PL/M-86) Compiler	o	o	o	o	●	854
Amsterdam Compiler Kit	o	o	o	o	●	259
C Cross-Compiler for National Semiconductor Series 32000	o	o	o	o	o	865
C Native and Cross-Compilers	●	●	●	●	●	868
C68	o	o	o	o	●	869
CAMIC (Computer-Aided Microprocessing)	o	o	o	o	●	266
CDL2 Compiler	o	o	o	o	o	870
Des BASIC (BASIC Cross-Compiler)	o	o	o	o	●	875
Des C (C Cross-Compiler)	o	o	o	o	●	876
Des Pascal (Pascal Cross-Compiler)	o	o	o	o	●	876
epsitool:assemble	o	o	o	o	o	278
FILETAB-D	●	●	●	●	●	280
M6800/01/05/09 Cross-Software Packages	o	●	●	o	o	293
Micro Concurrent Pascal (mCP) Cross-Compiler	o	o	o	o	o	904
Microbench FORTRAN-77 Cross-Compiler for the Intel 8086/8088 ...	o	●	●	o	o	310
Microbench Pascal Cross-Compiler for the Intel 8086/8088	o	●	●	o	o	311
Pascal-2™	●	●	●	●	●	914
Pascal-2™ Cross-Compiler to Target 68K with Concurrency Package ...	o	o	o	o	o	322
Pascal Native and Cross-Compilers	●	●	●	●	●	915
Pascal-xii	o	o	o	o	o	916
Professional Host Tool Kit BASIC-PLUS-2	o	o	o	o	o	923
The Safe C Runtime Analyzer™	o	●	●	●	●	935
SOFTBOL	o	o	o	o	o	939

Data base management

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
A-CLASS	○	●	●	○	○	978
A-to-Z Data Inquiry	○	○	○	○	○	796
ADE/RSX	○	○	○	○	○	1160
ADR/DATA™	●	○	○	○	○	796
AiM™ Receivables and Billing System	○	●	○	○	○	31
ARCHON: ADMS (Association Data Management System)	○	○	●	○	○	797
ARCHON: QDMS (Quodata Data Management System)	○	○	○	○	○	798
ARCHON: STUDENT	○	○	●	○	○	431
AUTOPRO (Automatic Programming)	○	○	○	○	○	799
Bacteriology Module: Leadership Series™	○	○	○	○	○	736
BASE/OE (Base Operating Environment)	●	○	○	○	○	800
BASIX	○	○	○	○	○	801
BBASE: A Small Data Base Program	○	○	○	○	○	801
Blood Bank Module: Leadership Series™	○	○	○	○	○	737
BOS/AutoIndex	○	○	○	○	○	1079
CADA-1983 (Computer-Assisted Data Analysis Monitor)	○	○	○	○	○	433
CAIRS (Computer-Assisted Information Retrieval Systems)	○	○	○	○	○	801
CAIRS Special Librarian	○	○	○	○	○	954
Call Tracker	○	○	○	○	○	1231
CLASS — Education Admission System	○	○	○	○	○	436
CLASS — Education Alumni/Development System	○	○	○	○	○	437
CLASS — Educational Financial Aid System	○	○	○	○	○	438
CLASS — IMPRS	○	○	○	○	○	439
CLASS (College-Level Administrative Software System)	○	○	○	○	○	440
Clini-CAL® Laboratory Information System	○	○	○	○	○	743
Clinical Data System Application Package and West Midlands RHA Blood Bank System	○	○	○	○	○	744
Clinical Support Systems: Leadership Series™	○	○	○	○	○	744
CMS (Cable Television Management System)	○	○	○	○	○	1066
COMPU-TRIEVE — Report Writer and Data Manager	○	○	○	○	○	747
CTS-300	○	○	○	○	○	1117
D™	○	○	○	○	○	802
DATA BASE: A Rudimentary Data Base Generator	○	○	○	○	○	803
Data Base Management Package	○	○	○	○	○	803
Data Base Management Package, Binary Kit Only, for the Professional 300	○	○	○	○	○	803
Data Base Management Package, Source Only, for the Professional 300	○	○	○	○	○	804
Data Boss/4	○	○	○	○	○	804
DATAMAT	○	○	○	○	○	805
DATATRIEVE-11	○	○	○	○	○	805
DATATRIEVE-11/IAS	○	○	○	○	○	806
DBMS-11	○	○	○	○	○	807
DBSMNG: Small Data Base Management Package Binary Kit	○	○	○	○	○	565
DFI/FMS (Dealer Finance and Insurance/Forms Management System)	○	○	○	○	○	1419
MMS-500 (Data Management Services)	○	○	○	○	○	276
DocuSearch Full-Text Retrieval System	○	○	○	○	○	1374
DPM (Distributed Plant Management)	○	○	○	○	○	1294
DPM-PLUS (Distributed Plant Management)	○	○	○	○	○	1295
DRS	○	○	○	○	○	809
DSM-11	○	○	○	○	○	1118
E Z Chart	○	○	○	○	○	684
EPS (Electronic Publishing System)	○	○	○	○	○	811
European MINC Package #2 — Lab Management	○	○	○	○	○	753
FILETAB-D	○	○	○	○	○	280
Flexware Application Development System	○	○	○	○	○	281

1502 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Flexware Spreadsheet	○	○	○	○	○	78
Fundraiser	○	○	○	○	○	814
GALEN — Complete Medical Office System	○	○	○	●	○	754
GBS (Genesys Banking System)	○	○	○	●	○	634
GCIS (Group Corporate Information System)	●	●	○	○	○	815
General-Purpose Data Base Package	●	○	○	○	○	816
Grade Reporting	○	●	○	○	○	445
HR&OD (Human Resource & Organization Development)	○	○	○	○	○	1170
IMPRS	○	●	○	○	○	816
INMAGIC	○	○	●	○	○	817
Insurance Business System™	○	●	○	○	○	848
IRIS-MINI	○	○	●	○	○	577
ISAM Subroutines Library	○	○	○	○	○	578
KEYWORD Information Manager	○	○	○	●	○	819
KSAM (Keyed Sequential Access Method)	○	○	○	○	○	290
LabCom + ®	○	○	○	○	○	763
LEADS: An Interactive Data Base Management System for Education	○	○	●	○	○	448
LEADS (Local Education Agency Data System)	○	○	○	○	○	448
LEDGR	○	○	○	○	●	820
Leverage	○	○	○	○	○	821
LEX-11	●	○	○	○	●	1092
LIBERTY™ Agency Management System	○	○	○	○	○	849
M (MUMPS)	○	○	○	○	○	1123
M/11+	○	○	○	○	○	1123
MAPS/DB	○	○	○	○	○	821
MDBS III	○	○	○	○	○	298
MEDICOMS (Medical Office Receivables Management System)	○	○	○	○	○	770
Membership	○	○	○	○	○	967
Micro-Master Data Base Applications Generator	○	○	○	○	○	300
Micro/GVS (Genesys Videotex System)	○	○	○	○	○	701
Microlink	○	○	○	○	○	822
Micro/RSTS DATATRIEVE-11	○	○	○	○	○	822
Micro/RSX DATATRIEVE-11	○	○	○	○	○	823
MIIS Standard	○	○	○	○	○	1125
MIIS/MAGIC (MEDITECH Interpretive Information System)	○	○	○	○	○	1126
Milldata	○	○	○	○	○	825
MIMER: The Software Machine	○	○	○	○	○	825
Mistress "Plus"	○	○	○	○	○	826
Mistress Relational Database Management System	○	○	○	○	○	827
Mistress/32	○	○	○	○	○	828
MP System	○	○	○	○	○	829
Multi-Tester System	○	○	○	○	○	450
Multiuser DTR	○	○	○	○	○	1327
Observer	○	○	○	○	○	1128
ORACLE® Relational Data Base Management System	○	○	○	○	○	829
p-System™ Version IV.2.1	○	○	○	○	○	1130
Peregrine Four	○	○	○	○	○	323
Person System	○	○	○	○	○	1070
Personnel Administrator	○	○	○	○	○	451
Pharmacy Module: Leadership Series™	○	○	○	○	○	781
Phoenix-Pro™	○	○	○	○	○	968
Pioneer COMMAND System for Financial Management, Distribution, and Manufacturing	○	○	○	○	○	831
Plessey-WP (Plessey Word Processor)	○	○	○	○	○	1098
PNMS III (Peregrine's Network Management System III)	○	○	○	○	○	193
POTACALC (AnalytiCalc): A 3-D Spreadsheet/Data Base System in VMS/BACKUP	○	○	○	○	○	831

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
PORTACALC/AnalytiCalc: A 3-D Spreadsheet/Data System	○	●	●	○	○	832
PRO-RDM (Responsive Data Manager)	○	●	●	●	○	325
PRO/Applications Starter Kit for Diskette or Hard Disk	●	○	○	○	○	1164
PRO/DATATRIEVE	●	○	○	○	○	833
PROFILE — Integrated Banking System	○	○	○	○	○	646
PRO/Laboratory Subroutine Package	●	○	○	●	○	248
Prolog	○	○	○	○	●	453
PRO/RDT	●	○	○	○	○	833
PROS (Prospect, Letter, and Sales Facility)	○	●	○	○	○	1240
ProtoCall 1000™	●	○	○	○	○	834
Q-CALL	○	○	○	○	●	1100
Q-NOTE	○	○	○	○	●	1102
QMS PROGRAMS® Computer Software/Environment	○	○	○	○	○	1042
QMS PROGRAMS® Computer Software/Materials	○	○	○	○	○	1044
QMS PROGRAMS® Computer Software/Optimum Inspection Strategies	○	○	○	○	○	1045
QMS PROGRAMS® Computer Software/Supplier Ratings	○	○	○	○	○	1047
QUILL	○	○	○	○	○	835
/rdb™ (Relational Data Base Management System)	○	○	○	○	○	588
RDM (Responsive Data Manager)	○	●	●	○	○	329
RDM™ (Responsive Data Manager)	●	○	○	○	○	835
Real Estate Information System	●	●	●	●	○	1200
REF-11™	●	○	○	○	○	955
Reliant	○	○	○	○	○	836
RESPAC (Real Estate Sales Data Retrieval Package)	○	○	○	○	○	1202
Retrieval	○	○	○	○	○	837
ROSTER	○	○	○	○	○	1105
RT-DBASE	○	○	○	○	○	593
RTFILE	●	●	●	○	○	837
RUNREF	○	○	○	○	○	1392
RxCom	○	○	○	○	○	787
Sales Prospect Data Base	○	○	○	○	○	1243
SATURN-BASE®	●	●	●	○	○	838
SAVER	○	○	○	○	○	595
Scribe Subscription and Merchandise Fulfillment System	○	○	○	○	○	1071
SEED DBMS (Data Base Management System)	○	○	○	○	○	838
Series IV System	○	○	○	○	○	938
SISINF	○	○	○	○	○	339
SOLUTIONS DECK Design	○	○	○	○	○	340
SOLUTIONS DECK Dictionary	○	○	○	○	○	599
SOLUTIONS DECK DMS	○	○	○	○	○	341
SOLUTIONS DECK Extract	○	○	○	○	○	342
SOLUTIONS DECK Master	○	○	○	○	○	343
SOLUTIONS DECK Report Writer	○	○	○	○	○	343
SOLUTIONS DECK Transaction	○	○	○	○	○	344
STACS (Serials Tracking and Control System)	○	○	○	○	○	956
STRINGS (Storage and Retrieval Information Graphics)	○	○	○	○	○	728
Student Administrator	○	○	○	○	○	463
Suspect-Identification System	○	○	○	○	○	952
Synergy	●	○	○	○	○	1164
TAB — A Low-Overhead Data Management System	○	○	○	○	○	841
TelEquip	○	○	○	○	○	1188
TESS™ (The Extended Simulation System)	○	○	○	○	○	729
Timeline Fixed Assets	○	○	○	○	○	142
TMR® (The Medical Record)	○	○	○	○	○	791
TRON Accounts Payable	●	●	●	●	○	144
TRON Accounts Receivable	●	●	●	●	○	145
TRON General Ledger	●	●	●	●	○	146

1504 Keyword Cross-Reference Guide

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
UDS Real Estate Sales Analysis	○	○	○	●	○	1204
ULISYS	○	●	○	○	○	957
UNIFY Relational Data Base Management System	○	○	○	○	●	355
USER-11 Database Management System	○	●	○	○	○	357
UTIANA-IMPRS Utility Analysis System	○	●	●	●	○	1189
Viewmaster — Microfilm Indexing and Retrieval System	○	○	○	○	○	842
Word List Processing	○	○	○	●	○	1111
Zetar	○	○	○	○	●	843
ZIN	○	○	○	○	●	147
Data collection						
AADC (Advanced Automated Data Collection)	○	●	●	●	●	979
ADF01/RSX Subroutine Library	○	○	●	○	○	228
AIM (Automated Industrial Monitoring)	○	○	●	○	○	981
AIM Batch (Automated Industrial Monitoring)	○	○	○	○	○	982
APPGEN Accountants Client Write-Up	○	○	○	○	○	34
ASDLOG (Automatic Searching for DIALOG Literature Search)	○	○	○	●	○	798
ATT (Automated Time and Attendance)	○	●	○	○	○	1169
AUTO-BOP	○	○	○	○	○	985
AUTO-CHEM	○	○	●	○	○	468
AUTO-MET and Q-VAR	○	○	○	○	○	986
BASIC and FORTRAN Support Packages	○	○	○	○	○	469
BT-II Voice Response Peripheral	○	●	●	●	○	1271
Building/Energy Management System (Kernel) — System 600	○	○	○	○	○	550
C EXECUTIVE, Release 2.0	○	○	○	○	○	1115
CAMS (Computerized Arrhythmia Monitoring System)	○	○	●	○	○	740
CARS (Computer Audit Retrieval System)	○	●	●	○	○	183
CHROMPAK (Chromatography Analysis Package)	○	○	○	●	○	1209
Chronometrix	○	○	○	○	○	962
CLIN-TEAMS®	○	○	○	○	○	1210
CLIN-TEAMS® /Remote	○	○	○	○	○	743
COMIT (Communications Management Information Tool)	○	●	●	●	○	1181
CONEFR.BAS (Cone Frustrum Layout)	○	○	○	○	○	482
CPLIB	○	○	○	○	○	269
D™	○	○	○	○	○	802
DAIRY-MAN Dairy Herd Management System	○	●	○	○	○	150
DATAIN	○	○	○	○	○	1210
DATS	●	○	○	○	○	680
DB*SCAN	○	○	○	○	○	234
DIBOL Subroutines	○	○	○	○	○	275
Dog License System	○	○	○	○	○	655
DPM (Dyeing Process Management)	○	○	○	○	○	1002
DTLIB	○	○	○	○	○	276
Dynamic Systems Account Manager	○	○	○	○	○	185
EDPC Utilities Package	○	○	○	○	○	570
EPR (Electron Paramagnetic Resonance) Package	○	○	○	○	○	236
European MINC Package #3 — Data Acquisition	○	○	○	○	○	237
Executive Information and Action Screen	○	○	○	○	○	963
Fast Fourier Transform and Two Applications	○	○	○	○	○	237
FINAID	○	○	○	○	○	444
Flexware Spreadsheet	○	○	○	○	○	78
FORTTRAN/RT-11 Laboratory Extension	○	○	○	○	○	238
GENLOG: Shareable Data Logging Package	○	○	○	○	○	239
Grade Book	○	○	○	○	○	445
GRADES: A Program to Facilitate the Administrative Aspect of						
Grading	○	○	○	○	○	446
GRADES: Course Management Program	○	○	○	○	○	446
GS-400 Circulation Control System	○	○	○	○	○	954

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
Home Health Management	○	○	●	○	○	757
HTP (Hemodynamic Tracking Profile)	○	○	○	●	○	759
Independent Laboratory System	○	○	○	○	○	759
intRlab	○	○	○	○	○	761
KEREN	○	●	○	○	○	1069
Laboratory Module: Leadership Series™	○	○	○	○	○	763
Laboratory Peripheral Device Handlers for the LSI-11	○	○	○	●	○	579
LSP-11 (Laboratory Subroutine Package)	○	○	●	●	○	1217
M-Net™ (Manufacturing Network)	○	○	○	●	○	1017
Machinery Monitoring Software System	○	○	○	○	○	1017
Marketab®	○	○	○	○	●	1236
Memo	○	○	○	○	○	1096
MINC-11 Data Acquisition Package for RSX-11M	○	○	○	○	○	241
MINC-11 Utility Package, Including HILOT	○	○	○	○	○	703
MINC BASIC/FORTRAN Support for HIPAD Digitizers	○	○	○	○	○	704
Miracle Viewdata	○	○	○	○	○	826
MRS (Medical Records System)	○	○	○	○	○	774
NCTAPE (Numerical Control Tape Processing System)	○	○	○	○	○	1027
Observer	○	○	○	○	○	1128
OMNICONROL® and OMNIPREP®	○	○	○	○	○	1029
OMS (Oil Movement System)	○	○	○	○	○	425
OSS (Optimal Sampling Schedule Designs)	○	○	○	○	○	1221
PAIS (Patient Accounting and Information System)	○	○	○	○	○	776
PC-11 (Process Control Operating System)	○	○	○	○	○	1131
PRO (Process-Oriented Software)	○	○	○	○	○	1038
Programs for Analyzing Stress-Strain Data from Lung Parenchyma and Artery Tests	○	○	○	○	○	784
Q-FORM	○	○	○	○	○	1101
Q-NOTE	○	○	○	○	○	1102
Real-Time Production Monitoring System	○	○	○	○	○	1049
RSX-11M Datalogging System for Acurex Netpac	○	○	○	○	○	249
RSXLIB	○	○	○	○	○	333
RT-11/FORTRAN Support for Data Acquisition and Display on a VT105	○	○	○	○	○	250
RT11/03 FORTRAN Extensions	○	○	○	○	○	934
S541/S641 APOGEE	○	○	○	○	○	528
SCORE (Supervisory Control of Refrigeration Equipment)	○	○	○	○	○	1052
SDP (Seismic Data Processing)	○	○	○	○	○	1225
SDRC® MODAL-PLUS™	○	○	○	○	○	529
Shop Floor Data Collection	○	○	○	○	○	1054
SIN-DAS (Single-User Data Acquisition System)	○	○	○	○	○	251
SLEEP: Programs of Analysis of Sleep-Wakefulness Data	○	○	○	○	○	788
SLIB.BAS: Library Maintenance Program	○	○	○	○	○	598
SMARTEYE Routing Controller	○	○	○	○	○	408
SofForms	○	○	○	○	○	340
SPM-11M-PLUS (Software Performance Monitor)	○	○	○	○	○	1149
SPM-11M (Software Performance Monitor)	○	○	○	○	○	1150
SPSS-11™	○	○	○	○	○	839
SPSS/PRO™	○	○	○	○	○	840
TEAMS® -TOX	○	○	○	○	○	1226
TELEVNT/TELSET/TELDA: Telemetry Acquisition and Reduction TSRUAP (A TSX-PLUS™ System Resources Utilization Accounting Package)	○	○	○	○	○	541
UTIANA-IMPRS Utility Analysis System	○	○	○	○	○	205
Vote-R (Voter Registration Package)	○	○	○	○	○	1189
Wittenberg University Utility Package	○	○	○	○	○	667
	○	○	○	○	○	360

1506 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Data conversion						
AADC (Advanced Automated Data Collection)	○	●	●	●	●	979
ACCES Network File Management Service	○	○	○	○	●	558
Any Databridge	○	○	○	○	○	1266
Any Master Network	○	○	○	○	○	1267
AUTOVAX	○	●	○	○	○	858
BACOMP (Pseudocompiler for RT-11/BASIC)	○	○	○	●	○	859
BASIC and FORTRAN Support Packages	○	○	●	●	○	469
BFX (Bulk File Transfer)	○	●	○	○	○	1268
CALDGN (CalComp to Design File) Interface Library	○	○	●	○	○	675
CALSIF (CalComp to Standard Interchange Format) Interface Library	○	○	●	○	○	676
Corgraph	●	○	○	○	○	679
CPMRX: CP/M® to DIGITAL Disk Translator for RSX-11M	○	○	○	○	○	564
CTS-300 RDCP (2780/3780)	○	○	○	○	○	1279
Data Entry Interface to Remote Hand-Held Computer	○	○	●	○	○	1280
DATE	○	○	○	○	○	184
DECnet/SNA RSX 3270 Terminal Emulator	○	○	●	○	○	1287
DIBOL String-Interpreting Subroutines	○	○	●	○	○	877
DIBOL Subroutines	○	○	○	○	○	275
DIBOL Translator	○	○	○	○	○	877
DIGIPORT	○	○	○	○	○	1292
DISASM.BAS MACRO Disassembler	○	○	○	○	○	878
DISASO: Object Module Disassembler	○	○	○	○	○	878
DISKMT, VARASC, and DOSRT: Programs for Reading and Writing Magnetic Tapes	○	○	○	○	○	566
Duxbury Braille Translator	○	○	●	○	○	1068
DXEBSC: Floppy Disk Utility	○	○	○	○	○	569
European MINC Package #1 — Utilities	○	○	○	○	○	571
Fast Fourier Transform Routine	○	○	○	○	○	880
File Transfer System	○	○	○	○	○	573
File Utility Programs for MU BASIC/RT-11	○	○	○	○	○	574
FORTTRAN Development Library	○	○	○	○	○	285
HASP COMBOARD™	○	○	○	○	○	1307
HCGS	○	○	○	○	○	694
IBMmvs/DECnet Gateway	○	○	○	○	○	1311
Lambert Geodetic Conversion	○	○	○	○	○	507
Linwood (Linear Least-Squares Curve-Fitting Program)	○	○	○	○	○	508
MACRO-11 Input/Output Macro Subroutines Library	○	○	○	○	○	295
MAGINT (Magnetic Tape Interchange Program)	○	○	○	○	○	581
MATCHMASTER™	○	○	○	○	○	581
Medical Laboratory System	○	○	○	○	○	768
Micro/RSX 3271 Protocol Emulator	○	○	○	○	○	1324
NETEX (Network Executive)	○	○	○	○	○	1328
OS/FT (File System)	○	○	○	○	○	585
PLXY-11M	○	○	○	○	○	714
PLXY-11M-PLUS and PLXY-11/RSTS	○	○	○	○	○	714
PLXY-11/RT	○	○	○	○	○	715
poly-XFR™ CP/M® Communications	○	○	○	○	○	1162
PRO/Producer Tool Kit	○	○	○	○	○	326
PRO/RTSORT™	○	○	○	○	○	588
PRO/SNA Communications	○	○	○	○	○	1338
RASM (Reverse Assemblies for RT-11)	○	○	○	○	○	928
RETCOM	○	○	○	○	○	836
REVISE: A Scanner for RT-11 Device Directions	○	○	○	○	○	590
RPG II	○	○	○	○	○	930
RSTS/E-2780	○	○	○	○	○	1340
RSTS/E High-Performance 2780/3780 Emulator	○	○	○	○	○	1341

	P/OS	RSX	RT-11	ULTRIX-11	Page
RSTS/E Whittier College Package, Part II	○	●	○	○	200
RSX-11 2780/3780 Emulator	○	○	●	○	1341
RSX-11/3271 Protocol Emulator	○	○	●	○	1343
RSX-11M VIGL	○	○	○	○	721
RSX-11M/IAS RJE/HASP	○	○	●	○	1344
RSX-11M/SNA Protocol Emulator	○	○	○	○	1345
RT-11 2780/3780 Protocol Emulator	○	○	○	●	1346
RTRSX: An RT Program to Read RSX Disks	○	○	○	●	594
RTSORT™	○	○	○	●	594
SRPRDR (Serial Protocol Driver)	○	○	○	○	1348
STRINGS (Storage and Retrieval Information Graphics)	○	○	○	●	728
Task Image Zapper and Other Goodies	○	○	●	○	349
TREAD: Subroutines to Read/Write IBM Standard Label RECFCM = FB Magnetic Tapes	○	○	●	○	604
UAP-LINK	●	●	●	○	1353
VBS (IBM to PDP-11 VBS-Format Magtape I/O Package)	○	○	○	○	604
VMSPIP	○	●	○	○	605
VT, BD, BD011, and IOS	○	○	●	○	730
WORD-11® Encryption Option	○	●	○	○	1403
Data dictionary					
A-to-Z Integration Kit	○	○	●	○	256
ABC	○	○	○	●	256
AUTOPRO (Automatic Programming)	○	○	○	○	799
BACOMP (Pseudocompiler for RT-11/BASIC)	○	○	○	●	859
CT*OS Spelling Corrector	●	○	○	○	1370
D™	○	○	○	●	802
Dictionary with Phonetics	○	○	○	○	1372
KEYWORD Information Manager	○	○	○	○	819
MDBS III	○	○	○	○	298
Micro-Master Data Base Applications Generator	●	○	○	○	300
Micro/RSTS DATATRIEVE-11	○	○	○	○	822
Micro/RSX DATATRIEVE-11	○	○	○	○	823
PNMS III (Peregrine's Network Management System III)	○	○	○	○	193
PRO/DATATRIEVE	●	○	○	○	833
Q*TEXT	○	○	○	○	1388
QUILL	○	○	○	○	835
ReadCOBOL™	○	○	○	○	929
Reliant	○	○	○	○	836
Retrieval	○	○	○	○	837
SEED DBMS (Data Base Management System)	○	○	○	○	838
SOLUTIONS DECK Dictionary	○	○	○	○	599
SpeedCOBOL™	○	○	○	○	939
SPELL-11	○	○	○	○	1395
SPELL for RSX-11M	○	○	○	○	1395
Spelling Checker with Dictionary Maintenance Utility	○	○	○	○	1396
WORD: Document Spelling Checker/Corrector	○	○	○	○	1404
Data entry					
BOS/AutoClerk	○	○	○	○	261
COMPU-CHART — Medical Records Program for Long-Term-Care Facilities	○	○	○	○	747
DEEP (Data Entry and Editing Package)	○	○	○	○	1372
DIBOL ACCEPT/DISPLAY Subroutines	○	○	○	○	877
DIBOL Communications Package	○	○	○	○	1291
EasyEntry Forms Management and Data Entry System	○	○	○	○	277
FMS-11/RSX	○	○	○	○	1377
FMS-11/RT-11	○	○	○	○	1378
FORTTRAN Development Library	○	○	○	○	285

1508 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
INDENT (Initial Data Entry)	○	○	●	○	○	816
INDENT/BASIC-PLUS-2 Programming Templates	○	○	●	○	○	287
InterText™	○	○	○	○	○	1090
KDSS (Key-to-Disk Data Entry System)	○	○	●	○	○	189
Leverage	○	○	○	○	○	821
LISTRSX: RSX-11D Multicolumn Listing Utility	○	○	○	○	○	1384
Memo	○	○	○	○	○	1096
Micro/RSX FMS-11 (Forms Management System)	○	○	○	○	○	824
Multiuser DTR	○	○	○	○	○	1327
PARSE/RSX: A Flexible FORTRAN-77 Filespec Parser	○	○	○	○	○	586
REAP™ (Reliability Effectiveness Analysis Program)	○	○	○	○	○	523
Reliant	○	○	○	○	○	836
RSTS/E INDENT	○	○	○	○	○	1388
Series IV System	○	○	○	○	○	938
Single-, Double-, Triple-Precision ASCII to Decimal/Decimal to ASCII	○	○	○	○	○	251
SofForms	○	○	○	○	○	340
User Command Linkage-Plus for the Professional 300 Series	○	○	○	○	○	358
VDE (Viking Data Entry)	○	○	○	○	○	841
VDM (Viking Data Manager)	○	○	○	○	○	842
VF	○	○	○	○	○	1110
VFM (Viking Forms Manager)	○	○	○	○	○	359
Debugging						
ADT: A Debug Driver for RT-11 V4	○	○	○	○	○	257
Advanced Development Tool Kit	○	○	○	○	○	258
Arabic PRO/Installation and Maintenance	○	○	○	○	○	1114
BOS/MicroCobol	○	○	○	○	○	864
BSO/Debug Microprocessor Symbolic Debuggers	○	○	○	○	○	263
BUG: A Debugging Tool Used on Existing IAS Tasks	○	○	○	○	○	265
C Test Suite	○	○	○	○	○	868
CLUE™ (C (Source Level) Linecount Utility)	○	○	○	○	○	268
COBOL-81/RSX	○	○	○	○	○	872
ComLINK: Remote Communications Enhancement	○	○	○	○	○	1275
Computer Byte or Word Checker	○	○	○	○	○	231
CROSS: A Cross-Referencer for BASIC Programs	○	○	○	○	○	270
DACON: D/A Conversions Package for Use with AAV11-C and KVV11-C	○	○	○	○	○	233
DBL (Data Business Language)	○	○	○	○	○	874
DDT: A Symbolic Debugger for P/OS	○	○	○	○	○	273
DDT22: Virtual Debugger and Systems Package	○	○	○	○	○	273
DEBUG/RT (Debugger)	○	○	○	○	○	274
DISASM.BAS MACRO Disassembler	○	○	○	○	○	878
DMG/NET	○	○	○	○	○	1293
FDT (FORTRAN Debugging Tool)	○	○	○	○	○	279
FODT (FORTRAN IV On-Line Debugging Tool for RSX-11)	○	○	○	○	○	282
FODT (FORTRAN IV On-Line Debugging Tool for RT-11)	○	○	○	○	○	282
FODT: FORTRAN-IV On-Line Debugging Tool for RT-11 for the Professional 300	○	○	○	○	○	282
FORODT: FORTRAN Debug Routine for RT-11	○	○	○	○	○	284
FORTAN-77 DEBUG/RSX, RSTS/E, IAS	○	○	○	○	○	883
FORTAN IV-PLUS and FORTRAN-77 On-Line Debugger	○	○	○	○	○	285
FORTAN/RT-11 Laboratory Extension	○	○	○	○	○	238
ISIS 80 Continuous System Simulation Program	○	○	○	○	○	288
JOBDMF/JOBDSP — Job Core Image Dumper	○	○	○	○	○	188
KMC11 Tools	○	○	○	○	○	289
KXT11-CA Peripheral Processor Tool Kit/RSX	○	○	○	○	○	1320
KXT11-CA Peripheral Processor Tool Kit/RT-11	○	○	○	○	○	1321
LSI-11 Microprogramming Tools, Version 1.0	○	○	○	○	○	292

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
MACDBG-RT	○	○	○	●	○	294
MACRO Library Macros for MACRO-11 Program Development and Debug	○	○	○	●	○	295
MACRO Package for MACRO-11 to Assemble INTEL 8080 Code	○	○	○	●	○	900
MACSYS-RT (MACRO-11 Development System Software)	○	○	○	○	○	296
MATCHMASTER™	○	○	●	○	○	581
Microbench Simulators for the Zilog Z80, Intel 8080, and Intel 8086 ...	○	●	●	○	○	312
MicroPower/Pascal-Micro/RSX	○	○	●	○	○	315
MicroPower/Pascal-RSX	○	○	○	○	○	315
MicroPower/Pascal-RT	○	○	○	●	○	316
Micro/RSTS FORTRAN-77 DEBUG	○	●	○	○	○	317
Micro/RSX COBOL-81	○	○	●	○	○	908
Micro/RSX DIBOL	○	○	○	○	○	909
Micro/RSX FORTRAN-77 DEBUG	○	○	○	○	○	318
MONTR: A Display Program for RSTS/E	○	○	●	○	○	1127
ODT-11T	○	○	○	○	●	914
ODTV09: RT-11 Debugging Tool	○	○	○	●	○	321
ORC: Object-to-MACRO Conversion	○	○	○	○	○	245
Pascal-2™	●	●	●	○	○	914
Pascal Compiler	○	○	○	○	○	915
Professional Host Tool Kit BASIC-PLUS-2	○	○	○	○	○	923
Professional Host Tool Kit FORTRAN-77	○	○	○	○	○	924
Professional Host Tool Kit FORTRAN-77 DEBUG	○	○	○	○	○	925
PRO/Tool Kit FORTRAN-77 DEBUG	●	○	○	○	○	328
RATFOR: Structured FORTRAN Preprocessor	○	○	○	○	○	929
Reese BASIC	○	○	○	○	○	930
RSTS/E DIBOL	○	○	○	○	○	932
RSX MDE/T-11 (Microcomputer Development Environment)	○	○	○	○	○	333
RT-11 MDE/T-11 (Microcomputer Development Environment)	○	○	○	○	○	334
RT-11/FORTRAN Real-Time Package for MINC (FRP)	○	○	○	○	○	1145
RTEM-11 (RT-11 Emulator for RT-11, Version 5.1)	○	○	○	○	○	334
RTEM-11 (RT-11 Version 5.2 Emulator for RSX)	○	○	○	○	○	335
RTPack	○	○	○	○	○	1147
The Safe C Runtime Analyzer™	○	○	○	○	○	935
Safe C Statement-Level Profiler™	○	○	○	○	○	336
Safe C™ Interpreter	○	○	○	○	○	936
SBC-11/21 Downloader	○	○	○	○	○	1347
SDRC® SABBA™	○	○	○	○	○	530
SIBOL (Software Ireland Business-Oriented Language)	○	○	○	○	○	938
SNP11M for RSX-11M and RSX-11M-PLUS	○	○	○	○	○	1149
SUPERDBG	○	○	○	○	○	346
SYMBUG (Symbolic Debugger for Use with MACRO Programs)	○	○	○	○	○	348
TRACE.MAC/TR.MAC	○	○	○	○	○	352
Tracer C Debugger	○	○	○	○	○	353
UMDL (Universal Microprocessor Development Laboratory)	○	○	○	○	○	355
UNIFORTH	○	○	○	○	○	942
UNITY Operating Systems	○	○	○	○	○	1155
VLISP-11	○	○	○	○	○	943
X-TOOLS	○	○	○	○	○	361
Decision support						
ABC/Gas	○	○	○	○	○	422
AIM Benchmark — Suite I	○	○	○	○	○	179
BARON: Principal, Payment, Amortization, and Interest Information	○	○	○	○	○	618
CALC-11/CALC-11 PLUS	○	○	○	○	○	621
Caswell Model (Apprehend)	○	○	○	○	○	1418
COLOR (Color Consultants Information System)	○	○	○	○	○	1247
Commercial/Residential Property Management	○	○	○	○	○	1196

1510 Keyword Cross-Reference Guide

	P/OS	R/ST	R/SX	RT-11	ULTRIX-11	Page
Conflict of Interest	○	●	○	○	○	946
Cost Estimating	○	○	○	○	●	1232
DataCalc	○	○	●	○	○	625
DATAMAT	○	○	○	○	○	805
Decision Tree	○	○	○	○	○	626
DISKTEST	○	○	○	○	○	567
FINAID	○	○	○	○	○	444
FINAL (Financial Analysis)	○	○	○	○	○	629
FINESSE	○	○	○	○	○	630
FINGRAPH	○	○	○	○	○	686
FPS80	○	○	○	○	○	633
GIS* (Guidance Information System)™	○	○	○	○	○	444
GRADES: A Program to Facilitate the Administrative Aspect of Grading	○	○	○	○	○	446
H-BOMM	○	○	○	○	○	1005
HR&OD (Human Resource & Organization Development)	○	○	○	○	○	1170
INTRST.PKG	○	○	○	○	○	638
IPACS (Interactive Pattern Analysis and Classification System)	○	○	○	○	○	1216
ISIS 80 Continuous System Simulation Program	○	○	○	○	○	288
Log: A Log-In, Log-Out Utility for RT-11	○	○	○	○	○	190
LP (Linear Programming)	○	○	○	○	○	1016
MAPS/DB	○	○	○	○	○	821
MAPS/GRAPH	○	○	○	○	○	699
MAPS/MODEL	○	○	○	○	○	639
Marketing Strategy Simulation for Minicomputers	○	○	○	○	○	1236
MBS SA (Manus Business Systems Sales Analysis)	○	○	○	○	○	1237
MICRO FEED	○	○	○	○	○	155
Multiplan* Electronic Worksheet	○	○	○	○	○	639
Pack	○	○	○	○	○	830
Performance Manager	○	○	○	○	○	642
Phoenix-Pro™	○	○	○	○	○	968
Plessey-CALC	○	○	○	○	○	1098
PRO-FPS	○	○	○	○	○	645
QMS PROGRAMS* Computer Software/Customer Complaint and Field-Failure Analysis	○	○	○	○	○	1041
QMS PROGRAMS* Computer Software/Instrument Calibration	○	○	○	○	○	1043
QMS PROGRAMS* Computer Software/What-If Studies	○	○	○	○	○	1047
REAS (Real Estate Appraisal System)	○	○	○	○	○	664
RISKAN1/RISKAN2 (Risk Analysis — General/Risk Analysis — Accounting)	○	○	○	○	○	971
ROMIS™ (Rotating Machinery Information System) Large Host	○	○	○	○	○	555
Sales Lead Analysis	○	○	○	○	○	1242
SATURN-CALC™ Electronic Spreadsheet	○	○	○	○	○	648
Series DEC	○	○	○	○	○	224
SIBYL/RUNNER* Interactive Forecasting System	○	○	○	○	○	972
SIGI (System of Interactive Guidance and Information)	○	○	○	○	○	461
SIMS (Supplies Inventory Management System)	○	○	○	○	○	1107
SPSS/PRO™	○	○	○	○	○	840
STI-ANIMATION	○	○	○	○	○	535
TESS™ (The Extended Simulation System)	○	○	○	○	○	729
VC	○	○	○	○	○	1110
ViewComp Electronic Spreadsheet	○	○	○	○	○	651
WHAT-IS* — The Answer to Transportation and Supply/Distribution Networks	○	○	○	○	○	1423
Dental						
CARE/DM	○	○	○	○	○	741
DataCare	○	○	○	○	○	749

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
DFM (Dental Financial Manager)	○	○	○	●	○	750
European MINC Package #5 — Data Analysis	○	○	○	●	○	1211
Medical Office Manager	○	●	○	○	○	768
MediCom®	○	○	○	○	●	770
PAS-11/D (Professional Accounting Series-11/Dental)	○	●	○	○	○	777
Practice Management System	○	●	○	○	○	782
Development tools						
A-to-Z Data Inquiry	○	○	●	○	○	796
Array Processor Support Under UNIX*	○	○	○	○	●	1114
BASIC and FORTRAN Support Packages	○	○	○	●	○	469
Benchmark Monitor for RSX	○	○	○	○	○	181
C Language System (Binary Version) for the Professional 300	○	○	○	●	○	865
Cephes Math Function Library	○	○	○	○	○	476
CLE: Command Line Editing and Storage Utility for RSX-11M	○	○	○	○	○	1368
Co-Idris™ Operating System	○	○	○	○	○	1116
Converter-22	○	○	○	○	○	1278
Data Boss/4	○	○	○	○	○	804
DBL (Data Business Language)	○	○	○	○	○	874
DMG/FLOW	○	○	○	○	○	681
EDCMD: Command Line Editor and Command Line Recall	○	○	○	○	○	1374
EPOS (Engineering- and Project Management-Oriented Support System)	○	○	○	○	○	810
FCP (FORTRAN Code Preprocessors)	○	○	○	○	○	881
FETCH.B: An Editor in MU BASIC	○	○	○	○	○	1376
GINO	○	○	○	○	○	691
GPUC (General-Purpose User Command Package)	○	○	○	○	○	497
HCGS (Host Computer Graphics Software)	○	○	○	○	○	695
IAS (Interactive Application System)	○	○	○	○	○	1121
JMI Portable C Library	○	○	○	○	○	893
KXT11-CA Peripheral Processor Tool Kit/RSX	○	○	○	○	○	1320
KXT11-CA Peripheral Processor Tool Kit/RT-11	○	○	○	○	○	1321
MACRO-05 MC6805 Cross-Development Tools	○	○	○	○	○	895
MACRO-09 MC6809 Cross-Development Tools	○	○	○	○	○	895
MACRO-65 6502 Cross-Development Tools	○	○	○	○	○	896
MACRO-68 MC68000/10 Cross-Development Tools	○	○	○	○	○	897
MACRO-80 8080/8085 Cross-Development Tools	○	○	○	○	○	897
MACRO-86 8086/8088 Cross-Development Tools	○	○	○	○	○	898
MACRO-8K Z-8000/1/2/3/4 Cross-Development Tools	○	○	○	○	○	898
MACRO-MC MC6800/01/02/03/08 Cross-Development Tools	○	○	○	○	○	899
MACRO-Z8 Z-80 Cross-Development Tools	○	○	○	○	○	901
MAGIC/L™	○	○	○	○	○	903
microMAGIC Microprocessor Software Development Package	○	○	○	○	○	905
Micro/RSTS	○	○	○	○	○	1124
Micro/RSX	○	○	○	○	○	1125
MIIS Standard	○	○	○	○	○	1125
MIIS/MAGIC (MEDITECH Interpretive Information System)	○	○	○	○	○	1126
PRO-IV Applications Processor	○	○	○	○	○	920
PROM Programming Software	○	○	○	○	○	248
PRO/Tool Kit FORTRAN-77	○	○	○	○	○	927
PRO/TSX-PLUS™	○	○	○	○	○	1134
PRO/VENIX™ Base System Kit	○	○	○	○	○	1135
RSTS/E	○	○	○	○	○	1137
RSX-11M-PLUS	○	○	○	○	○	1140
RSX-11M Real-Time Operating System	○	○	○	○	○	1140
RT-11 on the Professional	○	○	○	○	○	1143
RT-11 Single-User Operating System	○	○	○	○	○	1143
SAL Low-Cost Cross-Assemblers	○	○	○	○	○	937

1512 Keyword Cross-Reference Guide

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
SATT: Real-Time Operating System	○	○	○	●	○	1147
SHAREplus	○	○	○	●	○	1148
TNIX Operating System — Tektronix 856x Series	○	○	○	○	○	1151
TSX-PLUS™	○	○	○	●	○	1152
UNIX* System Tutorials	○	○	○	○	○	465
USX51 8051 Operating System	○	○	○	●	○	1156
USX86 8086 Operating System	○	○	○	○	○	1156
USX96 8096 Operating System	○	○	○	○	○	1156
WATBOL-11 Compiler	○	●	○	○	○	943
WATFOR-77 Compiler	○	●	●	○	○	944
Device drivers/handlers						
3780 COMBOARD™	○	○	●	○	○	1260
ADIOM (Analog Digital Input/Output Modules)	○	○	○	●	○	558
ADLIB	○	○	○	○	○	981
ADT: A Debug Driver for RT-11 V4	○	○	○	○	○	257
ARK — Magtape Archival and Backup Utility	○	○	○	○	○	560
Array Processor Support Under UNIX*	○	○	○	○	○	1114
ASEA's DS-8/QDBC-11 Device Driver	○	○	○	○	○	180
BSC/DV (Binary Synchronous Communications Support)	○	○	○	○	○	1270
BUPRES: A Program that Reads Individual Files from a Backup/Device Magtape	○	○	○	○	○	562
CalComp Host Computer Basic Software (On Line/Off Line)	○	○	○	○	○	675
CD: An RT-11 Device Driver for the DR-11W	○	○	○	○	○	1273
CDDRV (Cached Pseudo Disk CD)	○	○	○	○	○	1274
CDIG — Graphics Digitizing Program	○	○	○	○	○	476
CDPACK: Interface Routines for DR-11W	○	○	○	○	○	1274
CIT101: Routines to Drive the CIT101 and VT100 Terminals	○	○	○	○	○	267
CMODEL — Finite Element Model Builder	○	○	○	○	○	480
CMR11/CMV11 Software Driver	○	○	○	○	○	1274
Co-Idris™ Operating System	○	○	○	○	○	1116
COM: An RT/VMS Communications Package	○	○	○	○	○	1275
COMM IOP-DUP	○	○	○	○	○	1276
COMM IOP-DZ	○	○	○	○	○	1277
Converter-22	○	○	○	○	○	1278
CTS-11 Software Driver for RSX-11M	○	○	○	○	○	1278
DATAIN	○	○	○	○	○	1210
DECdataway Intelligent Subsystem	○	○	○	○	○	1280
DID-X.25	○	○	○	○	○	1291
DN-11 Device Driver for RSX-11	○	○	○	○	○	1293
DN-11 Driver for RSTS/E Version 7.0	○	○	○	○	○	1294
DPM (Distributed Plant Management)	○	○	○	○	○	1294
DPM-PLUS (Distributed Plant Management)	○	○	○	○	○	1295
DR11-A/C Loadable Driver with Build Package	○	○	○	○	○	1296
DRU11-C RSX-11 Driver	○	○	○	○	○	1296
DRX11-C/RSX Driver	○	○	○	○	○	1297
DT07-11M/M-PLUS	○	○	○	○	○	1297
Dual-Processor RT-11 System	○	○	○	○	○	1118
DV11/3271 Driver for RSX-11M V3.0	○	○	○	○	○	1298
EXTMT: A General-Purpose Magnetic Tape Handler	○	○	○	○	○	571
EZ Chart	○	○	○	○	○	685
FEPCM Software Tools Kit	○	○	○	○	○	279
FORTRAN/RT-11 Plotting System for the IEEE-488 HP-9872S Plotter	○	○	○	○	○	687
FPS (Fundamental Plotting Subroutines)	○	○	○	○	○	496
Functional Subroutines	○	○	○	○	○	496
GAM (Graphic Access Method)	○	○	○	○	○	687
GENPLT	○	○	○	○	○	689

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
GIGIC2: GIGI Graphics Printout on a Low-Priced C-ITOH Printer . . .	o	o	o	o	●	690
GKS/C	o	o	o	o	●	692
HASP COMBOARD™	o	●	●	o	o	1307
HC.MAC — A Handler that Converts a Second Terminal into a Line Printer	o	o	o	o	●	1380
HP.SYS: Hewlett-Packard 7470A Plotter Handler	o	o	o	o	●	1308
IBV-11A FORTRAN Support Package	o	o	o	o	●	1312
IEC11-M	o	o	●	o	o	1312
IEX-RSX-Driver	o	o	●	o	o	1313
I-X-RT-Handler	o	o	o	o	●	1313
IF-11/HDLC-X.25 Link-Level Software	o	o	●	o	o	1314
IGOR 1 (Interactive Graphic Operating Resource)	o	o	●	o	o	697
IP11 Industrial I/O Subsystem Software Driver	o	o	●	o	o	1316
IXV-11/RSX Driver	o	o	●	o	o	1317
KB Handler	o	o	o	o	●	1317
KMS11 RSX X.25 LAPB Link-Level Software	o	o	●	o	o	1319
KM.SYS — Device Driver for Konelar Extended Memory	o	o	o	o	●	289
KMV11-A HDLC Framing Software	o	o	●	o	o	1319
KMV 11 RSX X.25 LAPB Link-Level Software	o	o	●	o	o	1320
KXT11-CA Peripheral Processor Tool Kit/RSX	o	o	●	o	o	1320
KXT11-CA Peripheral Processor Tool Kit/RT-11	o	o	o	o	●	1321
Laboratory Peripheral Device Handlers for the LSI-11	o	o	o	o	●	579
LAD/11 (Local Area Devices) for RSX	o	o	o	o	o	579
LA.SYS	o	o	o	o	●	1321
Lawrence Plotting Package for BASIC-PLUS	o	●	o	o	o	698
LG.SYS: Centronics 739 Serial Printer Handler	o	o	o	o	●	1322
LSI-11 Audio Cassette Utility	o	o	o	o	o	580
Machinery Monitoring Software System	o	o	●	o	o	1017
MADRV (Memory-Assisted Disk MA)	o	o	●	o	o	1324
Memory Disk	o	o	o	o	o	191
MicroPower/Pascal-RSX	o	o	●	o	o	315
Micro/RSTS	o	o	●	o	o	1124
MINC-11 Utility Package, Including HILOT	o	o	o	o	o	703
MINC BASIC and RT FORTRAN Support for the HILOT DMP4 Plotter	o	o	o	o	●	704
MINC BASIC/FORTRAN Support for HIPAD Digitizers	o	o	o	o	o	704
MINC BASIC/FORTRAN: Support for the Nicolet Explorer	o	o	o	o	●	1325
MINC RT-11/FORTRAN Support for the Nicolet Explorer Via DLV11-J Serial Line	o	o	o	o	●	1325
MINC/BASIC-FORTRAN IV Support for the Tektronix 4662 Plotter	o	o	o	o	●	704
MINC/BASIC, MINC/FORTRAN Support for HILOT Plotter	o	o	o	o	●	705
MINC/BASIC, MINC/FORTRAN Support for the DP101 Plotter	o	o	o	o	o	705
MINC/FORTRAN Support for MNCKW, VT100, DLV11-J	o	o	o	o	●	1326
MIOS-11/RSX Driver	o	o	●	o	o	1326
MRRT-11 (Memory-Resident RT-11)	o	o	o	o	o	1128
MTLIB (Magnetic Tape Driver Library and Utilities)	o	o	o	o	●	243
MTSKIN: Write on a Tape in Card Format	o	o	o	o	o	584
MTSKOUT: Read a Tape in Card Format	o	o	o	o	o	584
Nicolet 1090 Digital Oscilloscope Handler and Interface to PDP-11	o	o	o	o	●	244
OS/NET (Local Area Networking)	o	o	●	o	o	1329
PB: Device Handler for Data I/O System 19 Prom Programmer	o	o	o	o	o	1329
PCL-11M	o	o	●	o	o	1331
PDP-8 Cross-Assembler and Utilities for RSX-11D	o	o	●	o	o	246
Picture Book	o	o	o	o	o	707
PLC (Programmable Logic Controller) Device	o	o	●	o	o	1331
PL.MAC: A Write-Only Device Handler for the IEEE-488 Interface 11-482	o	o	o	o	o	1332
PLOT-11/RSTS and PLOT-11M for RSX	o	●	●	o	o	709

1514 Keyword Cross-Reference Guide

	P/OS	RS/TS	RSX	RT-11	ULTRIX-11	Page
PLOT-11/RT	○	○	○	●	○	709
PLOT: Digital Incremental Plotter Software Package	○	○	○	○	○	710
Plotting Package for RT-11 FORTRAN	○	○	○	○	○	713
Professional Real-Time Interface Library	○	○	●	○	○	247
PRO/IVIS Loadable Driver and Subroutine Library	●	○	○	○	○	716
PROM/RT-11	○	○	○	○	○	1337
QUEST, Standard MUMPS Teaching Program, and DOC	○	○	○	○	○	454
RAM	○	○	●	○	○	718
RDDRV: Virtual RAM Disk Driver	○	○	○	○	○	1339
Real-Time Interface Support for the Nicolet Explorer by the RS2232	●	○	○	○	○	718
RO.MAC MT ROLLIN File Device Driver	○	○	○	○	○	592
RSX-11 Magtape Cornucopia	○	○	○	○	○	1138
RSX-11 TSU05 Device Driver	○	○	○	○	○	1343
RSX-11D Software Collection	○	○	○	○	○	1139
RSXLIB	○	○	○	○	○	333
RSXPROM	○	○	○	○	○	249
RTPack	○	○	○	○	○	1147
SLDRV: A Memory-Resident Disk Driver for RSX-11	○	○	○	○	○	598
SP (Serial Port I/O Handler)	○	○	○	○	○	1347
SPEAKR: Vented-Box Speaker Enclosure Calculator	○	○	○	○	○	1348
SRPRDR (Serial Protocol Driver)	○	○	○	○	○	1348
Steinmetz High School Card Reader Monitor	○	○	○	○	○	1151
System Device Handler for RM02, RM03, RP04, RP05, RP06, and RT-11 V4	○	○	○	○	○	348
TA.MAC: Very Friendly Serial Device Handler	○	○	○	○	○	1348
TCFL: Terminal Control Function Library	○	○	○	○	○	351
TCU-50 (Timing Control Unit)	○	○	○	○	○	204
TCU-50DYR Handler for RSX-11M/M-PLUS and Micro/RSX	○	○	○	○	○	205
TCUGET/TCUPUT Digital Pathways TCU-50D I/O	○	○	○	○	○	205
TDDRV (TDC 2000 Driver)	○	○	○	○	○	1350
Tektronix Emulator for RSX-11	○	○	○	○	○	729
TELEVNT/TELSET/TELDAX: Telemetry Acquisition and Reduction	○	○	○	○	○	541
TRACE.MAC/TR.MAC	○	○	○	○	○	352
TYPESET — Digitized Character Subroutines	○	○	○	○	○	1401
UNIFORTH	○	○	○	○	○	942
Uniq™ UNIX* System V	○	○	○	○	○	1154
VIDEOPRO	○	○	○	○	○	1356
Virtual DECtape System for RT-11 Version 4.0	○	○	○	○	○	1157
VM	○	○	○	○	○	209
VN	○	○	○	○	○	1357
VSV-01 Device Driver for RSX-11M	○	○	○	○	○	793
VSV11-M/M-PLUS Driver	○	○	○	○	○	1357
VT, BD, BD011, and IOS	○	○	○	○	○	730
YH for DH11/DHV11	○	○	○	○	○	1363
YL for DLV11J	○	○	○	○	○	1364
YZ for DZ11/DZV11	○	○	○	○	○	1364
ZCHART — Business Graphics	○	○	○	○	○	1112
Diagnostics						
ACCULINK™	○	○	○	○	○	1266
AIM Benchmark — Suite I	○	○	○	○	○	179
Arabic PRO/Installation and Maintenance	○	○	○	○	○	1114
BRUCE (Backup and Restore Utility with Consolidation and Enhancement)	○	○	○	○	○	562
CLIP (Command Language Interpreter)	○	○	○	○	○	268
Computer Guided Probe — Electronic Fault Isolation Package	○	○	○	○	○	482
Convert Tape Utility	○	○	○	○	○	232
D16 and ROTA Programs for GAMMA-11	○	○	○	○	○	749

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
DEBUG/RT (Debugger)	○	○	○	○	●	274
DIBOL String-Interpreting Subroutines	○	●	○	○	○	877
Diskdoctor: Disk Recovery Service	○	○	○	○	○	185
DPM (Distributed Plant Management)	○	○	●	○	○	1294
DPM-PLUS (Distributed Plant Management)	○	○	○	○	○	1295
DSKCHK: A Program to Check Space on Disks	○	○	○	○	○	568
DX/11M	○	○	●	○	○	1299
DX/RSTS	○	●	○	○	○	1299
FORTAN-77/RSTS/E	○	○	○	○	○	884
FORTAN-77/RSX	○	○	○	○	○	885
GSE-11	○	○	○	○	○	286
GSYS.BAS: System Management Utility	○	○	○	○	○	1119
I/LOGIC (Interactive Logic Simulation)	○	○	○	○	○	504
MacroVAX	○	○	○	○	○	902
Micro/RSTS FORTRAN-77	○	○	○	○	○	907
Micro/RSX	○	○	○	○	○	1125
Micro/RSX FORTRAN-77	○	○	○	○	○	909
poly-XFR™ CP/M® Communications	○	○	○	○	○	1162
Professional Host Tool Kit FORTRAN-77 DEBUG	○	○	○	○	○	925
Professional Installation and Maintenance	○	○	○	○	○	1134
RSEDIT (RSTS Disk Structure Editor)	○	○	○	○	○	589
RENUMB.BAS (BASIC File-Renumbering Program)	○	○	○	○	○	331
RLUTIL	○	○	○	○	○	591
RPM	○	○	○	○	○	198
RPM (RSTS/E Performance Monitor and Optimization Tool)	○	○	○	○	○	199
Squeezpak: Disk Compress and Optimization	○	○	○	○	○	202
SRF (System Reporting Facility)	○	○	○	○	○	202
TCAT/C (Test Coverage Analysis Tool)	○	○	○	○	○	350
TREAD: Subroutines to Read/Write IBM Standard Label RECFCM = FB Magnetic Tapes	○	○	○	○	○	604
XFR/XSL — RSX to RSX Communications Utility	○	○	○	○	○	1362
Disk utilities						
ABSPAT (Absolute Binary Patch on RK Disk and DECtape)	○	○	○	○	○	257
ADIOM (Analog Digital Input/Output Modules)	○	○	○	○	○	558
Alphabetical Directory Sort	○	○	○	○	○	559
ARK — Magtape Archival and Backup Utility	○	○	○	○	○	560
BACK/REST	○	○	○	○	○	560
BACKUP	○	○	○	○	○	561
BMUX: A Protocol Converter Program	○	○	○	○	○	1269
BNR Utilities	○	○	○	○	○	261
BOS/5 Operating System	○	○	○	○	○	1115
BRUCE (Backup and Restore Utility with Consolidation and Enhancement)	○	○	○	○	○	562
CACHE-11M/PLUS	○	○	○	○	○	182
CAMAC Support Library for Industrial Systems	○	○	○	○	○	266
CDDRV (Cached Pseudo Disk CD)	○	○	○	○	○	1274
Co-Idris™ Operating System	○	○	○	○	○	1116
Complete File Sort Utility	○	○	○	○	○	563
CON: A Program to Make a File Contiguous on a Files-11 Disk	○	○	○	○	○	563
Converter-22	○	○	○	○	○	1278
COPSY	○	○	○	○	○	563
Cortex Desk Set™	○	○	○	○	○	1082
CPMRX: CP/M® to DIGITAL Disk Translator for RSX-11M	○	○	○	○	○	564
CROSS: A Cross-Referencer for BASIC Programs	○	○	○	○	○	270
DACSORT: FORTRAN-Callable Subroutine	○	○	○	○	○	565
DECtap Manufacturing System	○	○	○	○	○	1000
DEtype Word Processing Application	○	○	○	○	○	1371

1516 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
DFL: A Program to Dump Physical Blocks from Floppy Disk	o	o	●	o	o	565
DIBOL Collection	o	●	●	o	o	275
DIRECTORY: List Disk Directories	o	o	●	o	o	566
Diskdoctor: Disk Recovery Service	o	o	●	o	o	185
DISKIT	o	●	o	o	o	1117
DISKMT, VARASC, and DOSRT: Programs for Reading and Writing Magnetic Tapes	o	o	o	●	o	566
DISKTEST	o	●	●	o	o	567
MMS-500 (Data Management Services)	o	●	o	o	o	276
DOPTER	o	●	o	o	o	567
DSKBLD (RSTS/E Disk-to-Disk Utility)	o	●	o	o	o	568
DSKCHK: A Program to Check Space on Disks	o	o	●	o	o	568
DSKLIB: A Disk Librarian Utility Program	o	o	o	●	o	569
Dual-Processor RT-11 System	o	o	o	●	o	1118
DXEBS: Floppy Disk Utility	o	o	●	o	o	569
EDCMD: Command Line Editor and Command Line Recall	o	o	●	o	o	1374
Everhart/Hoffing RSX Collection	o	o	●	o	o	1119
FAST Subroutines for Performing Block I/O Under Files-11	o	o	●	o	o	572
FILEDT	o	●	o	o	o	1376
Files	o	o	●	o	o	574
FLUTE: Floppy Disk Ownership Arbitration Utility	o	o	o	o	o	187
FORMAT: DECTape Formatter for RT-11	o	o	o	●	o	576
FTALK	o	o	o	●	o	1303
GAMKED and CURKED: Programs for Editing GAMMA-11 and CURVE Macros	o	o	o	●	o	1379
GETBIN: Change a Paper Tape Binary Program to an RSX-11M Bootstrappable Task	o	o	●	o	o	577
GSYS.BAS: System Management Utility	o	●	o	o	o	1119
LOCATE — Multidevice File Locator	o	o	o	●	o	580
MADRV (Memory-Assisted Disk MA)	o	o	●	o	o	1324
MBOS/5 Operating System	o	o	o	o	o	1124
MBOT04 Bootstrap Loader	o	o	o	●	o	582
MEMDISK	o	o	●	o	o	191
Memory Disk	o	o	o	●	o	191
NANOBIT Disk Sort	o	o	o	●	o	584
One-Drive Diskette and File Copy	o	o	o	●	o	585
P8P11: ASCII File Transfer from PDP-8 to PDP-11	o	o	o	●	o	586
PLIBR: A Library Control Program	o	●	o	o	o	587
polyFORTH II	o	o	●	o	o	1132
PRO/Associate	●	o	o	o	o	1334
Professional Installation and Maintenance	o	o	o	o	o	1134
PRO/RTSORT™	o	o	o	●	o	588
RABBIT-4 Security System	o	●	o	o	o	196
RDDRV: Virtual RAM Disk Driver	o	o	o	●	o	1339
RDESDT (RSTS Disk Structure Editor)	o	●	o	o	o	589
RECOVR: An RT-11 Directory Restore Utility	o	o	o	●	o	590
RECOVR (RSX Corrupted Disk Recovery Utility)	o	o	o	●	o	590
Resource Accounting Module	o	●	●	o	o	197
REVISE: A Scanner for RT-11 Device Directions	o	o	o	●	o	590
RLUTIL	o	o	●	●	o	591
RMSREO (RMS Indexed File Reorganization Utility)	o	●	o	o	o	591
RO.MAC MT ROLLIN File Device Driver	o	o	o	●	o	592
RPM (RSTS/E Performance Monitor and Optimization Tool)	o	●	o	o	o	199
RSTS/E Whittier College Package, Part I	o	o	o	o	o	1137
RSX-11D Software Collection	o	o	●	o	o	1139
RSX-11D System Utility Package	o	o	o	●	o	1139
RT-11 System Utilities MAPP, FIND, and GRAB	o	o	o	●	o	250
RTSORT™	o	o	o	●	o	594

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
SAVER	○	●	○	○	○	595
Single-Disk DOPTER	○	●	○	○	○	596
SLDRV: A Memory-Resident Disk Driver for RSX-11	○	○	●	○	○	598
SNDRCV (Send/Receive File Utility)	○	○	○	○	○	339
SORT: Fast Memory/Disk Sort/Merge for RT-11	○	○	○	●	○	599
SORT for RT-11 for the Professional 300	○	○	○	●	○	599
SORT: Utility ASCII Sort	○	○	○	○	○	600
Squeezeapk: Disk Compress and Optimization	○	○	●	○	○	202
STM (Storage Manager)	○	○	●	○	○	345
SWAP: Modify Swapping/Shuffling Parameters	○	○	●	○	○	1151
System Device Handler for RM02, RM03, RP04, RP05, RP06, and RT-11 V4	○	○	○	●	○	348
TAPER	○	○	○	●	○	253
TERM.FOR: Smart Terminal Program for MINC	○	○	○	○	○	1352
UFDOPT (UFD Optimizer)	○	○	●	○	○	604
UNITY Operating Systems	○	○	○	○	○	1155
VFY: RT-11 Disk-Verification Utility	○	○	○	○	●	605
Virtual Disk	○	○	○	●	○	1356
VM	○	○	○	○	○	209
VN	○	○	○	○	●	1357
ZORT	○	○	○	○	●	606
Distribution						
AGGDISS	○	○	○	○	○	214
Chariot	○	○	○	○	○	51
CMI PROFIT	○	○	○	○	○	992
COP (Customer Order Processing), MCBA, Inc.	○	○	●	○	○	998
CP-11 Coupon Redemption System	○	○	○	○	○	1232
DAIRY-MAN Dairy Herd Management System	○	○	○	○	○	150
DDP ICSF (Inventory Control System)	○	○	○	○	○	58
DDP OEIF (Order Entry/Invoicing)	○	○	○	○	○	58
DDP PAR (Accounts Receivable)	○	○	○	○	○	59
DDP PCSF (Purchasing Control System)	○	○	○	○	○	61
DTRO Forecasting System	○	○	○	○	○	1233
FACS — Newspaper Circulation and Accounts Receivable	○	○	○	○	○	1068
H-STORE	○	○	○	○	○	1009
IM (Inventory Management), MCBA, Inc.	○	○	○	○	○	1010
IMPCON (Inventory Management and Production Control System)	○	○	○	○	○	1012
Inventory Control	○	○	○	○	○	1014
Inventory Management	○	○	○	○	○	1014
MAXX A Management Accounting System	○	○	○	○	○	95
Pioneer COMMAND System for Financial Management, Distribution, and Manufacturing	○	○	○	○	○	831
P/O (Purchase Order and Receiving), MCBA, Inc.	○	○	○	○	○	1037
ProBiz™ Purchasing Management	○	○	○	○	○	130
Produce Distribution System	○	○	○	○	○	156
Project Delta, Sections G and H: Business and Data Processing	○	○	○	○	○	647
Shelf	○	○	○	○	○	1413
TOLAS Inquiry and Reporting System	○	○	○	○	○	143
Vista Publishing and Distribution System	○	○	○	○	○	1073
WHAT-IS® — The Answer to Transportation and Supply/Distribution Networks	○	○	○	○	○	1423
Documentation tools						
Additions to the Roger Williams College Collection	○	○	○	○	○	673
Convert Tape Utility	○	○	○	○	○	232
CPS Graphics Package	○	○	○	○	○	680
CT*OS/IT*OS Word Processing	○	○	○	○	○	1083
Data Search	○	○	○	○	○	1371

1518 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
DOC	○	●	○	○	○	1373
Documentor/F	○	●	●	●	○	1373
Dreams	○	○	○	○	○	1086
EDMACS: A Screen Editor Program	○	●	○	○	○	1375
Enforcer I™	○	○	○	○	○	278
FILDMP: File Dump Utility and Object Module Cracker	○	○	●	○	○	280
Flexware Application Development System	○	○	○	○	○	281
FORTTRAN-77 and BASIC Runtime Units	○	○	○	○	○	284
FORTTRAN-77 Compiler	○	○	○	○	○	883
Framer	○	●	○	○	○	1379
IGOR Document Preparation System	○	○	●	●	●	1381
KSAM (Keyed Sequential Access Method)	○	○	○	○	○	290
Lawrence RUNOFF	○	○	○	●	○	1382
LEXET	●	●	●	●	●	1092
MACROCAT	○	○	○	○	○	1070
MUMPS-11 Library Tape	○	○	○	○	○	321
PEP (Program Editor and Processor) Programming System	○	○	○	○	○	918
Plessey-WP (Plessey Word Processor)	○	●	●	●	○	1098
PROOF: A Proofreading Program/Spelling Checker	○	○	○	○	○	1386
PRO/VENIX™ Base System Kit	○	○	○	○	○	1135
Q*TEXT	○	●	●	●	○	1388
RES	○	○	●	○	○	524
RNI (WRDPRO—Word Processing/Text Editing)	○	●	●	●	○	1105
RSTS-11 Library Tape 1	○	●	○	○	○	1136
RSTS-11 Library Tape 2	○	○	○	○	○	1136
RUNOFF, Bonner Lab	○	○	○	●	○	1390
RUNOFF for RSX-11 and RSTS/E	○	●	●	○	○	1391
RUNOFF: M02.4-14	○	○	●	○	○	1391
RUNOFF M02.4H for the Professional 300	○	○	○	○	○	1392
SB-5 (System Builders-5)	○	●	●	○	○	337
SLIB.BAS: Library Maintenance Program	○	●	○	○	○	598
System Device Handler for RM02, RM03, RP04, RP05, RP06, and RT-11 V4	○	○	○	○	●	348
TBS PDS (Pascal Development System)	○	●	●	●	○	349
TECO-11 (Text Editor and Corrector) for RSTS/E	○	○	○	○	○	1396
TECO, COPY, SRD, MCR, and RNO for P/OS	●	○	○	○	○	351
TECO Full-Screen Editor	○	○	●	●	○	1397
TECO V28 for RT-11	○	○	○	○	●	1397
TECO V36	○	○	○	○	○	1398
TECO V36 for RSX-11D, RSX-11M, RSX-11M+, and IAS	○	○	○	●	○	1398
/usr/tools	○	○	○	○	○	1401
Utility Routines ASCIB, JLBITS, and CSISR	○	○	●	○	○	253
WCC CAT (Computer-Assisted Translation and Multilanguage WP System)	○	○	○	○	○	1074
XREF	○	○	○	○	○	605
Down-line loading						
Access/BSC 3270	○	○	●	●	●	1262
Access/DIA	○	○	●	●	●	1263
Access/SNA 3270	○	○	●	●	●	1264
Access/SNA 3770	○	○	●	●	●	1264
Access/SNA 5250	○	○	●	●	●	1265
Access/SNA APPC	○	○	●	●	●	1265
FEPCM Software Tools Kit	○	○	○	○	○	279
FTALK	○	○	○	○	○	1303
LCP01 Software	○	○	○	○	○	1383
LINK: FORTRAN—Callable Task Linking	○	○	○	○	○	292
LOAD PDT	○	○	○	○	○	1162

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Picture Book	○	○	●	○	○	707
RSXPROM	○	○	●	○	○	249
RT-11 File Conversion Program for Absolute Loader Paper Tapes with SA ≤1000	○	○	○	●	○	249
SBC-11/21 Downloader	○	○	○	●	○	1347
UN1004/RSX	○	○	●	○	○	1354
Earth resources						
MAPSS = MAGIC (Management and Analysis of Geographic Characteristics Information)	○	○	●	○	○	700
Education						
ARCHON: FRS (Financial Reporting System)	○	●	○	○	○	617
ARCHON: PAY	○	●	○	○	○	1168
BARON: Principal, Payment, Amortization, and Interest Information	○	○	○	○	○	618
BAS (Budgetary Accounting System)	○	●	○	○	○	39
BDARE: Dynamic-System Simulation in BASIC	○	○	●	○	○	469
DB*SCAN	○	○	○	○	○	234
Duxbury Braille Translator	○	●	●	○	○	1068
Fiscal Accounting	○	○	○	○	○	68
GIGI Software	○	○	○	○	○	689
GLIM-3	○	●	●	○	○	1215
Idaho Falls Payroll System	○	○	○	○	○	89
POM/T (Purchase Order Management/Tendering System)	○	○	○	○	○	644
PPBS: Budgeting/GL/AR/AP	○	○	○	○	○	645
Project Delta, Section B: Statistics	○	○	○	○	○	519
Project Delta, Section C: Business	○	○	○	○	○	971
Project Delta, Sections E and F: Additional Mathematics and Teacher Assistance	○	○	○	○	○	520
RAS (Receivable Accounting System)	○	○	○	○	○	133
WATBOL-11 Compiler	○	○	○	○	○	943
WATFOR-77 Compiler	○	○	○	○	○	944
Electrical						
AC Circuit Analysis Program	○	○	○	○	○	468
AUTO-MET and Q-VAR	○	○	○	○	○	986
AWRAP (Wire Wrapping for GD Fully Automatic Machines)	○	○	○	○	○	987
Building/Energy Management System (Kernel) — System 600	○	○	○	○	○	550
CLENS — Automotive Head Lamp Design Code	○	○	○	○	○	479
Color Trend Plot — System 600	○	○	○	○	○	679
DAREP (Differential Analyzer Replacement — Portable), DARE/11 ..	○	○	○	○	○	487
Duty Cycling — System 600	○	○	○	○	○	551
ECAP	○	○	○	○	○	490
ELAN-AC	○	○	○	○	○	491
ELAN-MOD (Transistor and Diode Modeling Program)	○	○	○	○	○	492
ELAN-TR (Transient Radiation)	○	○	○	○	○	492
Electrical Contracting	○	○	○	○	○	1182
Electrical Repair and Paging	○	○	○	○	○	1183
ETAKE 2 (Estimating, Takeoff, and Pricing System)	○	○	○	○	○	219
EUBA (Electrical Utility Billing and Accounting)	○	○	○	○	○	1183
GINTRAN (Graphics Input and Transformation)	○	○	○	○	○	691
ICLAYOUT	○	○	○	○	○	503
IUC (Interactive Unit Commitment)	○	○	○	○	○	507
Laboratory Applications-11 Library	○	○	○	○	○	1217
Peak Demand Limiting — System 600	○	○	○	○	○	553
PSS/2P (Power System Simulator)	○	○	○	○	○	521
PSS/O-S (Power System Simulator for Operations)	○	○	○	○	○	522
REACT	○	○	○	○	○	1187
Start/Stop Time Optimization — System 600	○	○	○	○	○	556

1520 Keyword Cross-Reference Guide

	P/Os	RSTS	RSX	RT-11	ULTRIX-11	Page
WWRAP (Wire Wrapping for Semiautomatic Machines)	o	o	o	o	o	1062
Electronic						
Circuits	o	o	o	o	o	478
Computer Guided Probe — Electronic Fault Isolation Package	o	o	o	o	o	482
CSM/O/P (Continuous System Modeling and Optimizing Program)	o	o	o	o	o	486
Electronic Component Distribution System	o	o	o	o	o	380
I/CAP (Interactive Electronic Circuit Analysis Program)	o	o	o	o	o	503
LDAT (Logic Design Automation Terminal)	o	o	o	o	o	508
MOSFIT (MOS Transistor Model Parameter Extraction Package)	o	o	o	o	o	512
SDM (Symbolic Drawing Machine)	o	o	o	o	o	724
Electronic mail						
A-to-Z Electronic Mail	o	o	o	o	o	1076
AutoTELEX	o	o	o	o	o	1268
DECmail-11	o	o	o	o	o	1084
DECmail™-PLUS	o	o	o	o	o	1085
DIGICOMM-11	o	o	o	o	o	1291
Dreams	o	o	o	o	o	1086
EXECmail	o	o	o	o	o	1087
Executive Information and Action Screen	o	o	o	o	o	963
HDC+ (Hospital Data Communication)	o	o	o	o	o	755
IAS MAIL	o	o	o	o	o	1121
MAIL: Electronic Mail Package for RSTS/E	o	o	o	o	o	1093
Mail Package	o	o	o	o	o	1094
Mail/Message System	o	o	o	o	o	1095
Minimail	o	o	o	o	o	1096
Officeman	o	o	o	o	o	1097
PRO/Office Workstation	o	o	o	o	o	1099
Q-MAIL	o	o	o	o	o	1101
Q-OFFICE®	o	o	o	o	o	1103
QM (Quick-Mail)	o	o	o	o	o	1104
SofGram Electronic Communications	o	o	o	o	o	1108
TC (Total Communicator)	o	o	o	o	o	1349
Tenny Electronic Bulletin Board Message Mailing Facility	o	o	o	o	o	1351
User-Mail	o	o	o	o	o	1109
Employment						
APPGEN Payroll	o	o	o	o	o	1168
C-11 Hospital Resource Management	o	o	o	o	o	738
C-11 Human Resource Management	o	o	o	o	o	1169
CAS.4 (Payroll)	o	o	o	o	o	49
CLASS — Education Personnel System	o	o	o	o	o	438
Employment Agency	o	o	o	o	o	1170
GIS® (Guidance Information System)™	o	o	o	o	o	444
L/P (Labor Performance), MCBA, Inc.	o	o	o	o	o	964
MANEX (Manpower Expenditure Recording)	o	o	o	o	o	965
MATCHUP: Assignment	o	o	o	o	o	1171
PASS (Payroll and Staffing System)	o	o	o	o	o	778
Pay (Canadian Payroll)	o	o	o	o	o	107
Payroll	o	o	o	o	o	1172
Payroll (Canadian)	o	o	o	o	o	113
Permanent Placement Personnel System	o	o	o	o	o	1173
Personnel Searcher	o	o	o	o	o	1174
ProBiz™ Payroll	o	o	o	o	o	129
Temporary Nursing Personnel Agency System	o	o	o	o	o	790
Energy						
AIM (Automated Industrial Monitoring)	o	o	o	o	o	981

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Building/Energy Management System (Kernel) — System 600	○	○	●	○	○	550
Color Trend Plot — System 600	○	○	●	○	○	679
Duty Cycling — System 600	○	○	○	○	○	551
MICRO LP	●	○	○	○	○	1020
MINI LP	○	○	●	○	○	1022
MOLDYN (A Molecular Dynamics Package)	○	○	○	○	○	242
MYCRO/11 Process Management System	○	○	●	○	○	1024
Peak Demand Limiting — System 600	○	○	●	○	○	553
SCORE (Supervisory Control of Refrigeration Equipment)	○	○	○	●	○	1052
Start/Stop Time Optimization — System 600	○	○	○	○	○	556
TMS-4 (TANO Macro System, Version 4)	○	○	●	○	○	427

Engineering

Athena Distributed Control System	○	○	●	○	○	549
CalComp Host Computer Basic Software (On Line/Off Line)	○	○	●	○	○	675
CAM-TECH	○	○	●	○	○	990
CCSI-PLOT®	○	○	●	○	○	676
CHROM (Chromatography Graphics and Analysis)	○	○	●	○	○	1208
CHROMPAK (Chromatography Analysis Package)	○	○	○	○	○	1209
CODE (Computer-Oriented Drafting Equivalent)	○	○	●	○	○	678
DATAIN	○	○	○	○	○	1210
Engineering Science Program Exchange	○	○	○	○	○	443
ETAKE 2 (Estimating, Takeoff, and Pricing System)	○	○	○	○	○	219
Gear	○	○	●	○	○	688
GENPLT	○	○	○	○	○	689
HATCH — Crosshatching	○	○	●	○	○	694
HCGS (Host Computer Graphics Software)	○	○	●	○	○	695
IDL (Interactive Data Language)	○	○	○	○	○	1216
MAPSS = MAGIC (Management and Analysis of Geographic Characteristics Information)	○	○	○	○	○	700
MICRODARE	○	○	○	○	○	1217
Minitab® Data Analysis Software	○	○	○	○	○	1218
Pascal-2™ Cross-Compiler to Target 68K with Concurrency Package	○	○	○	○	○	322
Pioneer COMMAND Bill of Materials Processor Module	○	○	○	○	○	1033
PLOT50 (Vector Plotting for the LA50)	○	○	○	○	○	711
PMCS (Process Monitoring and Control System)	○	○	○	○	○	1035
PREMINI	○	○	○	○	○	970
RS/1™	○	○	○	○	○	1224
RSX-11 FOCAL	○	○	○	○	○	933
SDM (Symbolic Drawing Machine)	○	○	○	○	○	724
STAG II Drawing System	○	○	○	○	○	727
Wall	○	○	○	○	○	732

Environmental

Athena Distributed Control System	○	○	●	○	○	549
CMMS (Comprehensive Maintenance Management System)	○	○	○	○	○	550
QMS PROGRAMS® Computer Software/Environment	○	○	○	○	○	1042
Receptor System 8835	○	○	○	○	○	523
WATER-MAN HNA (Hydraulic Network Analyzer)	○	○	○	○	○	157

Facilities management

AIM (Automated Industrial Monitoring)	○	○	○	○	○	981
BOSS (Building Maintenance Operation Service System)	○	○	○	○	○	1181
Color Trend Plot — System 600	○	○	○	○	○	679
DDC/PPCL Compiler — System 600	○	○	○	○	○	875
UTIANA-IMPRS Utility Analysis System	○	○	○	○	○	1189

File management

APPGEN Applications Generator	○	○	○	○	○	259
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1522 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
AVL	○	○	○	○	●	859
BCD Magtape Conversions	○	○	○	○	○	229
BNR Utilities	○	○	●	○	○	261
BOS/5 Operating System	○	○	○	○	○	1115
BOS/AutoClerk	○	○	○	○	○	261
Bridge/86	○	●	○	○	●	1080
C-11 Report Writer	○	○	○	○	○	620
Cardware Disk Subsystem	○	●	●	○	○	1161
DATA-LOCK®	○	●	○	○	○	233
DATAMAT	○	○	○	○	○	805
DATMAN (BASIC Data Manipulation Package)	○	○	○	○	○	807
DECCOD2	○	○	○	○	○	234
DECODE3 — RT-11 SAV/LDA Files Disassembler	○	○	○	○	○	235
DECODE4: RT-11 SAV Files Disassembler	○	○	○	○	○	235
DEEP (Data Entry and Editing Package)	○	●	○	○	○	1372
DIALUP	○	○	○	○	○	1290
DISASM.BAS MACRO Disassembler	○	○	○	○	○	878
DOC: Document Output Program	○	○	○	○	○	1373
DSM-11	○	○	○	○	○	1118
EXFILE (Exchange File Program)	○	○	○	○	○	1302
FORMATIX	○	○	○	○	○	814
FORTTRAN Development Library	○	○	○	○	○	285
FTP (TCP/IP File Transfer Program)	○	○	○	○	○	1304
H-CHAMP	○	○	○	○	○	1120
IAS/2780 Protocol Emulator	○	○	○	○	○	1309
Idris™ Operating System	○	○	○	○	○	1122
JMI Portable C Library	○	○	○	○	○	893
KM.SYS — Device Driver for Konelar Extended Memory	○	○	○	○	○	289
LISTER: Listing Utility Program	○	○	○	○	○	1383
MAPS/DB	○	○	○	○	○	821
MBOS/5 Operating System	○	○	○	○	○	1124
Monitor Commands for Namelists Package	○	○	○	○	○	192
poly-XFR™ CP/M® Communications	○	○	○	○	○	1162
PRM-11 (Pascal Record Management)	○	○	○	○	○	324
PRM-11 (Pascal Record Management-11)	○	○	○	○	○	919
PRO/TSX-PLUS™	○	○	○	○	○	1134
Q-ONE	○	○	○	○	○	1103
Q*TEXT	○	○	○	○	○	1388
RABBIT-4 Security System	○	○	○	○	○	196
Resource Accounting Module	○	○	○	○	○	197
RSTS MACRO Odds and Ends	○	○	○	○	○	931
RSTS/E	○	○	○	○	○	1137
RSTS/E Whittier College Package, Part I	○	○	○	○	○	1137
RSTS/E Whittier College Package, Part II	○	○	○	○	○	200
RSX-11D System Utility Package	○	○	○	○	○	1139
RSX-11M-PLUS	○	○	○	○	○	1140
RSX-11M Real-Time Operating System	○	○	○	○	○	1140
RT-11 Single-User Operating System	○	○	○	○	○	1143
RTFILE	○	○	○	○	○	837
SCCS (Source Code Control system)	○	○	○	○	○	338
SourceTools™	○	○	○	○	○	345
SPELL-11	○	○	○	○	○	1395
TED (The NDSU Terminal Editor)	○	○	○	○	○	1399
Tektronix 8001/8002/8550 Communication Package	○	○	○	○	○	1350
TIMANA-IMPRS Time-Analysis System	○	○	○	○	○	1177
TSX-PLUS™	○	○	○	○	○	1152
TYCHO/HASP	○	○	○	○	○	1352
UAP-LINK	○	○	○	○	○	1353

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
ULTRIX-11 Operating System	○	○	○	○	●	1154
USER-11 Database Management System	○	●	○	○	○	357
VDE (Viking Data Entry)	●	○	○	○	○	841
VDM (Viking Data Manager)	○	○	●	○	○	842
Viewmaster — Microfilm Indexing and Retrieval System	○	○	○	●	○	842
Virtual Disk	○	○	●	○	○	1356
X	○	●	●	○	○	1405
File transfer						
A-to-Z Document Transfer (DECdx)	○	○	○	●	○	1261
ACCES Network File Management Service	○	○	○	●	○	558
ACCES NPP (Network Protocol Package)	○	○	○	○	●	1261
Access/BSC 3270	○	○	●	○	○	1262
Access/DIA	○	○	●	○	○	1263
Access/SNA 3270	○	○	○	○	●	1264
Access/SNA 3770	○	○	○	○	●	1264
Access/SNA 5250	○	○	○	○	●	1265
Access/SNA APPC	○	○	○	○	●	1265
ACCULINK™	○	○	○	○	●	1266
ADIOM (Analog Digital Input/Output Modules)	○	○	○	○	●	558
Any Databridge	○	○	○	○	○	1266
Any Master Network	○	○	○	○	○	1267
Automotive Release Accounting	○	○	○	○	●	986
BACK/REST	○	○	○	○	●	560
BACKUP	○	○	○	○	○	561
BASIC-PLUS System Dependency Flagger	○	○	○	○	●	229
BCD Magtape Conversions	○	○	○	○	○	229
BFX (Bulk File Transfer)	○	○	○	○	○	1268
BLAST® (Blocked Asynchronous Transmission)	○	○	○	○	●	1269
BRUCE (Backup and Restore Utility with Consolidation and Enhancement)	○	○	○	○	●	562
BSO/Com-1	○	○	○	○	○	1270
BUPRES: A Program that Reads Individual Files from a Backup/Device Magtape	○	○	○	○	○	562
BURCOM (DIGITAL/Burroughs Communication System)	○	○	○	○	○	1271
CADO2C (Conversion Package for CADOL Software)	○	○	○	○	○	231
CALOUT	○	○	○	○	○	1272
COM: An RT/VMS Communications Package	○	○	○	○	○	1275
Convert Tape Utility	○	○	○	○	○	232
COPSY	○	○	○	○	○	563
CP/M-86® for DIGITAL	○	○	○	○	○	1116
CPMRSX: CP/M® to DIGITAL Disk Translator for RSX-11M	○	○	○	○	○	564
CRAFT (Copperweld Robotics ASCII Format Translator)	○	○	○	○	○	564
CrossWord	○	○	○	○	○	1161
CUX: A Virtual Terminal Program	○	○	○	○	○	1279
Data I/O PROM Programmer Software and Utility Program	○	○	○	○	○	272
DECdaway Intelligent Subsystem	○	○	○	○	○	1280
DECdx/RSTS	○	○	○	○	○	1280
DECdx/RSX	○	○	○	○	○	235
DECnet-11M-PLUS: RSX-11M-PLUS Network Software	○	○	○	○	○	1281
DECnet-11M: RSX-11M Network Software	○	○	○	○	○	1282
DECnet-11S: RSX-11S Network Software	○	○	○	○	○	1283
DECnet-IAS	○	○	○	○	○	1284
DECnet-Micro/RSX	○	○	○	○	○	1284
DECnet-RT	○	○	○	○	○	1286
DECnet/E	○	○	○	○	○	1287
DECnet/SNA RSX 3270 Terminal Emulator	○	○	○	○	○	1287
DFL: A Program to Dump Physical Blocks from Floppy Disk	○	○	○	○	○	565

1524 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
DIBOL Communications Package	○	○	○	●	○	1291
DIGIPORT	○	●	○	○	○	1292
Diskdoctor: Disk Recovery Service	○	○	○	○	○	185
DISKMT, VARASC, and DOSRT: Programs for Reading and Writing Magnetic Tapes	○	○	○	●	○	566
DISKTEST	○	○	○	○	○	567
DMG/NET	○	●	○	○	○	1293
DSKBLD (RSTS/E Disk-to-Disk Utility)	○	●	○	○	○	568
DTX: A Utility for Transferring Text Files and Absolute Binary Images	○	○	○	●	○	569
DUPLEX — Serial Communication Between Computers	○	○	●	○	○	1298
DXEBSC: Floppy Disk Utility	○	○	●	○	○	569
European MINC Package #1 — Utilities	○	○	○	●	○	571
EXFILE (Exchange File Program)	○	○	○	●	○	1302
EXOS 8031 (Excelan Open Architecture Systems)	○	○	●	○	○	1302
EXOS 8032 (Excelan Open Architecture Systems)	○	○	○	●	○	1303
EXTMT: A General-Purpose Magnetic Tape Handler	○	○	○	●	○	571
FAST Subroutines for Performing Block I/O Under Files-11	○	○	●	○	○	572
File Transfer System	○	○	●	○	○	573
File Utility Programs for MU BASIC/RT-11	○	○	○	○	○	574
Files	○	○	●	○	○	574
FILTRA (File Transfer Program)	○	○	○	○	○	575
FORTTRAN/RT-11 Plotting System for the IEEE-488 HP-9872S Plotter	○	○	○	●	○	687
FTP (TCP/IP File Transfer Program)	○	○	○	○	○	1304
FTU (File Transfer Utility)	○	○	○	●	○	576
FUSION™	○	○	○	○	●	1304
GETBIN: Change a Paper Tape Binary Program to an RSX-11M Bootstrappable Task	○	○	○	○	○	577
GOULD/DEC Data Link	○	○	○	○	○	1305
GVS/File	○	○	○	○	○	1306
HASP + RSX-11M/RSX-11M-PLUS Interconnect Software	○	○	○	○	○	1307
HASP + RT-11 and TSX-PLUS Interconnect Software	○	○	○	○	○	1308
HEX: Hex File Editor	○	○	○	○	○	577
IAS/2780 Protocol Emulator	○	○	○	○	○	1309
IBMmv/DECnet Gateway	○	○	○	○	○	1311
IF-11/3780	○	○	○	○	○	1314
IF-11/X.25 Packet-Switched Network Firmware	○	○	○	○	○	1315
Instrument Bus Subroutines	○	○	○	○	○	1316
Intercomputer File Transfer Program	○	○	○	○	○	1316
ISMDDF (ISAM to DIBOL Data File Utility)	○	○	○	○	○	578
Kermit-11	○	○	○	○	○	1318
KM.SYS — Device Driver for Konelar Extended Memory	○	○	○	○	○	289
LAD/11 (Local Area Devices) for RSX	○	○	○	○	○	579
LCP01 Software	○	○	○	○	○	1383
LOAD PDT	○	○	○	○	○	1162
LSI-11 Audio Cassette Utility	○	○	○	○	○	580
LSTERM: Virtual Terminal Program	○	○	○	○	○	1323
MACS-11 (Media Access and Conversion System for PDP-11)	○	○	○	○	○	241
MAGINT (Magnetic Tape Interchange Program)	○	○	○	○	○	581
MBOT04 Bootstrap Loader	○	○	○	○	○	582
Micro/RSX 2780/3780 Emulator	○	○	○	○	○	1324
NETEX (Network Executive)	○	○	○	○	○	1328
One-Drive Diskette and File Copy	○	○	○	○	○	585
p-System™ Version IV.2.1	○	○	○	○	○	1130
P8P11: ASCII File Transfer from PDP-8 to PDP-11	○	○	○	○	○	586
PB: Device Handler for Data I/O System 19 Prom Programmer	○	○	○	○	○	1329
PC-DOS for DIGITAL	○	○	○	○	○	1131

	P/OS	R/S	RSX	RT-11	ULTRIX-11	Page
PIP10	○	○	○	●	○	587
poly-COM™	○	●	●	○	○	1332
poly-XFR™ CP/M® Communications	○	○	●	●	○	1162
PRO/Communications for Diskette or Hard Disk	●	○	○	○	○	1335
PRO/DECnet	●	○	○	○	○	1335
Professional Host Communications	○	○	●	○	○	1336
PROM/RT-11	○	○	○	●	○	1337
PROSE-PLUS	●	○	○	○	○	1387
PRO/SNA Communications	●	○	○	○	○	1338
Q-MAIL	○	○	○	○	●	1101
Q-NET — Interface to DECnet	○	○	○	○	○	1339
Real-Time Interface Support for the Nicolet Explorer by the RS2232 ..	●	○	○	○	○	718
RMS-11 FORTRAN—Callable Subroutines	○	○	○	○	○	591
RSTS/E High-Performance 2780/3780 Emulator	○	●	○	○	○	1341
RSX-11 2780/3780 Emulator	○	○	○	○	○	1341
RSX-11/3271 Protocol Emulator	○	○	○	○	○	1343
RSX-11M/SNA Protocol Emulator	○	○	○	○	○	1345
RSXPROM	○	○	○	○	○	249
RT-11 2780/3780 Protocol Emulator	○	○	○	○	○	1346
RT-11 to UNIX* Transfer Utilities	○	○	○	○	●	592
RT-11 V2.0/MU BASIC Utilities Package	○	○	○	○	○	334
RT-11/FORTRAN Support for the VT105 Emulator on the VT125	○	○	○	○	○	723
SAVER	○	●	○	○	○	595
SBC-11/21 Downloader	○	○	○	○	○	1347
SKYPORT	○	○	○	○	○	597
SNDRCV (Send/Receive File Utility)	○	○	○	○	○	339
Squeezpak: Disk Compress and Optimization	○	○	○	○	○	202
TANGO	○	○	○	○	○	1349
TAPER	○	○	○	○	○	253
Task Image Zapper and Other Goodies	○	○	○	○	○	349
TED (The NDSU Terminal Editor)	○	○	○	○	○	1399
Tektronix 8001/8002/8550 Communication Package	○	○	○	○	○	1350
TEM (Terminal Emulator for RSX-11)	○	○	○	○	○	1351
TEMPRO	○	○	○	○	○	1351
TSTE (Time-Share Terminal Emulator)	○	○	○	○	○	1352
UAP-LINK	○	○	○	○	○	1353
VAMP	○	○	○	○	○	1355
Virtual DECtape System for RT-11 Version 4.0	○	○	○	○	○	1157
VLISP-11	○	○	○	○	○	943
VMSPIP	○	○	○	○	○	605
VT (Virtual Terminal)	○	○	○	○	○	1358
VTERM III	○	○	○	○	○	1358
VTERM (Virtual Terminal Program)	○	○	○	○	○	1359
VTERM (Virtual Terminal Support): MINC BASIC/FORTRAN IV	○	○	○	○	○	1359
VTERM/4010	○	○	○	○	○	1360
VTUMC (Virtual Terminal Routine for UNIVAC 1100 Systems)	○	○	○	○	○	1360
XFR/XSL — RSX to RSX Communications Utility	○	○	○	○	○	1362
Financial analysis						
1040 Tax Planner	○	○	○	○	○	610
1040 Tax System	○	○	○	○	○	610
ABC (Automated Bank Control System)	○	○	○	○	○	612
ABC/Analyst	○	○	○	○	○	612
ABC/Financial Planning, Modeling, and Reporting System	○	○	○	○	○	613
Accountant II General Ledger System	○	○	○	○	○	10
Accounts Payable	○	○	○	○	○	11
Accounts Payable and Cash Disbursements Package	○	○	○	○	○	19
Accounts Receivable System	○	○	○	○	○	28

1526 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
AESOP (Aggregate Exception System for Mortgage Portfolios)	○	●	○	○	○	1194
AMS (Asset Management Client Reporting System)	○	●	○	○	○	615
APPGEN Fixed Assets	○	○	○	○	○	36
ARCHON: FRS (Financial Reporting System)	○	●	○	○	○	617
ATHENA/graph™ Presentation Business Graphics	●	○	○	○	○	673
ATHENA/slide	○	●	○	○	○	674
Banker's Credit Management System	○	●	○	○	○	617
BAS (Budgetary Accounting System)	○	●	○	○	○	39
BOS/Planner	○	○	○	○	○	1079
Budgetary Accounting	○	○	●	○	○	40
Business Information System	○	○	○	●	○	619
C-11 Job Cost	○	○	○	○	○	44
CALC-11/CALC-11 PLUS	○	○	○	○	○	621
CHARGER	○	○	○	○	○	742
CLASS — Educational Financial Aid System	○	○	○	○	○	438
Commercial Loan System	○	○	○	○	○	623
COSAS (Comprehensive On-Line Student Accounting System)	○	○	○	○	○	441
County Treasurer's Investment Management	○	○	○	○	○	624
Data*Model Spreadsheet Management System	○	○	○	○	○	625
DDP PAS (General Ledger)	○	○	○	○	○	59
DIGICALC™	○	○	○	○	○	627
Distribusyst (Distribution Management System)	○	○	○	○	○	374
FACS — Job Costing	○	○	○	○	○	219
FACS — Job Order System	○	○	○	○	○	383
FINAL (Financial Analysis)	○	○	○	○	○	629
FINAR (Financial Analysis and Reporting System)	○	○	○	○	○	630
FINPRO (Financial Projection Model)	○	○	○	○	○	631
Fixed Asset Depreciation	○	○	○	○	○	70
Fixed Assets	○	○	○	○	○	70
Fixed Assets	○	○	○	○	○	71
FLEET™	○	○	○	○	○	1420
Flexware Spreadsheet	○	○	○	○	○	78
General Ledger	○	○	○	○	○	79
General Ledger	○	○	○	○	○	82
General Ledger	○	○	○	○	○	84
General Ledger	○	○	○	○	○	84
General Ledger System	○	○	○	○	○	87
GENSIM-IMPRS Financial Simulator	○	○	○	○	○	635
GIGI Software	○	○	○	○	○	689
GLS (General Ledger System)	○	○	○	○	○	754
HDS/II (Healthcare Data Systems)	○	○	○	○	○	756
IMS-8 (Integrated Mill-Management System-8)	○	○	○	○	○	155
IND/DEV-11 (Industrial Development Management System)	○	○	○	○	○	1090
InterAP™	○	○	○	○	○	91
InterFad™	○	○	○	○	○	637
InterGL™	○	○	○	○	○	92
Legal Time and Billing System	○	○	○	○	○	949
MAGIC*CALC	○	○	○	○	○	638
MAPS/MODEL	○	○	○	○	○	639
MBS SA (Manus Business Systems Sales Analysis)	○	○	○	○	○	1237
Perspective/700 Accounts Payable	○	○	○	○	○	116
Perspective/700 Accounts Receivable	○	○	○	○	○	116
Perspective/700 Order Processing	○	○	○	○	○	400
PFS (Patient Funds System)	○	○	○	○	○	780
PICALC: Lifetime Earnings Estimation	○	○	○	○	○	951
Plessey-CALC	○	○	○	○	○	1098
PM11 Accounts Receivable	○	○	○	○	○	121
PM27 Accounts Payable	○	○	○	○	○	121

	P/OS	R/ST	R/SX	RT-11	ULTRIX-11	Page
PM28 General Ledger/Financial Reporting	○	●	○	○		122
PMS (Property Management System)	○	○	○	○		1198
Point of Sale	○	●	○	○		1411
PORTSIS™ Investment Management	●	○	○	○		644
PRO/DIGICALC	●	○	○	○		646
Project Delta, Section C: Business	○	●	○	○		971
Property Management (Rental)	○	○	○	●		1199
QMS PROGRAMS® Computer Software/Cost of Quality and Material Review	○	○	●	○	○	1041
S/A (Sales Analysis)	○	○	○	○	○	1241
SACCPAY (Accounts Payable Package)	○	○	○	●	○	135
SATURN-CALC™ Electronic Spreadsheet	●	○	○	○	○	648
Tax Planner	○	○	○	○	○	650
Timeline Fixed Assets	○	●	○	○		142
VC	○	○	○	○	●	1110
ViewComp Electronic Spreadsheet	○	○	○	○	●	651
Financial management						
ABLE® Client Writeup System	○	●	○	○	○	8
Accounts Payable	○	●	○	○	○	14
Accounts Receivable	○	○	○	○	○	23
AiM™ Payables	○	○	○	○	○	30
AiM™ Receivables and Billing System	○	●	○	○	○	31
C-11 Mortgage Banking II	●	○	○	○	○	946
CAS (Comprehensive Accounting System)	○	○	○	○	○	45
CLASS — Educational Financial System	○	○	○	○	○	439
CLASS (College-Level Administrative Software System)	○	○	○	○	○	440
CMIS (Mental Health Management Information System)	○	○	○	○	○	745
Collaborative Clinic System	○	○	○	○	○	746
DMIS (Doctors' Medical Information System)	○	○	○	○	○	751
FACS (Flexible Automated Collection System)	○	○	○	○	○	1088
General Ledger	○	○	○	○	○	82
General Ledger	○	○	○	○	○	84
General Ledger and Financial Reporting	○	○	○	○	○	85
GIMS (Government Information Management System)	○	○	○	○	○	658
Housing Authority — Section 8	○	○	○	○	○	1196
ILSA (Installment Loan Service Accounting)	○	○	○	○	○	1197
IMPCON-FMS	○	○	○	○	○	90
Innkeepers Management System	○	○	○	○	○	1250
KRONIX-11™	○	○	○	○	○	947
KRONIX-PC™	○	○	○	○	○	948
Leadership Series™ Hospital Information System	○	○	○	○	○	765
M (MUMPS)	○	○	○	○	○	1123
MJA™ General Ledger for the PRO 350	○	○	○	○	○	99
Mutual Insurance Processing System	○	○	○	○	○	849
NCS (National Creditor System)	○	○	○	○	○	101
OGA\$ (Oil and Gas Accounting System)	○	○	○	○	○	425
PHENIX PASS	○	○	○	○	○	117
Pioneer COMMAND System for Financial Management, Distribution, and Manufacturing	○	○	○	○	○	831
Project Cost Accounting System	○	○	○	○	○	519
Retail Furniture System	○	○	○	○	○	1412
School Business Administrator	○	○	○	○	○	457
School Fiscal Accounting	○	○	○	○	○	458
Series DEC	○	○	○	○	○	224
SL-11 Amusement Devices Accounting System	○	○	○	○	○	173
Timeline Accounts Payable	○	○	○	○	○	141
Timeline Accounts Receivable	○	○	○	○	○	141

1528 Keyword Cross-Reference Guide

	P/OS	R/SX	RT-11	ULTRIX-11	Page
Timeline General Ledger and Financial Reporting	○	●	○	○	143
Timeshare Contract Management System	○	●	○	○	1255
Treasurer's General Ledger and Warrant Reconciliation	○	●	○	○	144
VMIS (Visiting Nurse Home Health Management Information System)	○	○	○	●	792
ZIN	○	○	○	○	147
Financial planning					
1040 Tax Planner	○	●	○	○	610
ABC/Financial Planning, Modeling, and Reporting System	○	●	○	○	613
Accountant's Time and Billing System	○	○	○	○	10
Accounts Payable System	○	○	○	○	20
A/D (Fixed Assets and Depreciation), MCBA, Inc.	○	●	○	○	29
BOS/Planner	○	○	○	○	1079
C-CALC	○	●	○	○	621
CALC-11/CALC-11 PLUS	○	○	○	●	621
Campaign Finance Program	○	○	○	○	654
Casting Costing, Pricing, and Profit Analysis	○	○	○	○	962
Easypost Insurance Agency Management System	○	○	○	○	846
FINAID	○	●	○	○	444
FINAL	○	○	○	○	629
FINAR (Financial Analysis and Reporting System)	○	○	○	○	630
FINPRO (Financial Projection Model)	○	○	○	○	631
Flexware General Ledger	○	○	○	○	75
FPS80	○	●	○	○	633
General Ledger	○	○	○	○	84
HR&OD (Human Resource & Organization Development)	○	○	○	○	1170
INTEREST (Interactive Estimating)	○	○	○	○	220
MAGIC*CALC	○	○	○	○	638
MAPS/MODEL	○	○	○	○	639
MCS-3 (Manufacturing Control System)	○	○	○	○	1020
Multiplan® Electronic Worksheet	○	○	○	○	639
NYPLAN	○	○	○	○	640
PAX	○	○	○	○	642
Perspective/700 General Ledger	○	○	○	○	117
PM11 Accounts Receivable	○	○	○	○	121
PM27 Accounts Payable	○	○	○	○	121
PM28 General Ledger/Financial Reporting	○	○	○	○	122
PORTSIS™ Investment Management	○	○	○	○	644
PRO-FPS	○	○	○	○	645
PRO/DIGICALC	○	○	○	○	646
QUOTE: Manufacturing Cost Estimating	○	○	○	○	1048
Safe Deposit System	○	○	○	○	648
School Business Administrator	○	○	○	○	457
SIBYL/RUNNER® Interactive Forecasting System	○	○	○	○	972
Supercomp-Twenty™	○	○	○	○	649
Tax Planner	○	○	○	○	650
TMS (Trust Management System)	○	○	○	○	650
UltraCalc®	○	○	○	○	1164
Fixed assets					
Abax Depreciation System	○	○	○	○	7
A/D (Fixed Assets and Depreciation), MCBA, Inc.	○	○	○	○	29
APPGEN Fixed Assets	○	○	○	○	36
C-11 Fixed Assets	○	○	○	○	1195
Clover Personal Income Tax Package	○	○	○	○	53
Depreciation Schedule	○	○	○	○	61
Depreciation System	○	○	○	○	627
FACS—Fixed Asset Management	○	○	○	○	66

	P/OS	R/ST	R/SX	RT-11	ULTRIX-11	Page
Fixed Asset Accounting	○	○	○	○	○	69
Fixed-Asset Control	○	●	○	○	○	551
Fixed Asset Depreciation	○	●	○	○	○	70
Fixed Assets	○	○	○	○	○	70
Fixed Assets	○	●	○	○	○	71
Fixed Assets	○	●	○	○	○	72
Fixed Assets and Depreciation	○	●	○	○	○	72
InterFad™	○	○	○	○	○	637
LT/AMS — Financial Management for Long-Term-Care Facilities	○	●	○	○	○	765
Pioneer COMMAND Fixed-Assets Module	○	○	○	○	○	643
PRO-IV Fixed Assets	●	●	○	○	○	124
Timeline Fixed Assets	○	●	○	○	○	142
Flow analysis						
C301A	○	○	○	○	○	472
Chanel	○	●	○	○	○	477
Hammer	○	●	○	○	○	499
HEC 1: Runoff Hydrographs	○	●	○	○	○	500
HEC 2: Backwater Profiles	○	●	○	○	○	500
Network	○	●	○	○	○	514
NEUPAN (Neutral Point Analysis)	○	●	○	○	○	514
PSS/2P (Power System Simulator)	○	○	○	○	○	521
PSS/O-S (Power System Simulator for Operations)	○	○	○	○	○	522
SIZEB	○	●	○	○	○	531
SIZEE	○	○	○	○	○	531
SIZEP	○	○	○	○	○	532
SPIPE (Circular Pipe Analysis)	○	●	○	○	○	534
UDAP (Urban Drainage Analysis Package)	○	○	○	○	○	542
WATDIS (Water Distribution System Analysis)	○	●	○	○	○	545
Forecasting						
ABC/Analyst	○	●	○	○	○	612
ABC/Financial Planning, Modeling, and Reporting System	○	●	○	○	○	613
Automatic Business Control System	○	○	○	○	○	370
C-CALC	○	●	○	○	○	621
CAMPUS (Campus Planning Package)	○	○	○	○	○	434
DataCalc	○	●	○	○	○	625
DTRO CDMS (Comprehensive Distribution Management System)	○	●	○	○	○	377
DTRO Forecasting System	○	●	○	○	○	1233
FACS — Accounts Payable	○	○	○	○	○	65
FACS — Fixed Asset Management	○	○	○	○	○	66
FINAL	○	●	○	○	○	629
FINESSE	○	○	○	○	○	630
Flexware Accounts Payable	○	○	○	○	○	74
Flock Modeling and Egg Production Forecasting	○	○	○	○	○	153
FPS80	○	○	○	○	○	633
H-BOMM	○	○	○	○	●	1005
MAGIC*CALC	○	○	○	○	○	638
Pack	○	○	○	○	○	830
PEPS (Production Estimating and Planning System)	○	○	○	○	○	1031
Physician Systems	○	○	○	○	○	781
PRO-FPS	●	○	○	○	○	645
REAP™ (Reliability Effectiveness Analysis Program)	○	○	○	○	○	523
SIBYL/RUNNER® Interactive Forecasting System	●	○	○	○	○	972
SRF (System Reporting Facility)	○	○	○	○	○	202
Tax Planner	○	○	○	○	○	650
Foreign language translation						
MACROCAT	○	○	○	○	○	1070

1530 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
WCC CAT (Computer-Assisted Translation and Multilanguage WP System).....	○	○	●	○	○	1074
Forms management						
ATHENA/graph™ Presentation Business Graphics	●	○	○	○	○	673
ATHENA/slide	●	○	○	○	○	674
BASIX	○	○	●	○	○	801
BCP (Barcode/Block Character Plotter)	○	○	○	○	○	674
CFMS (Computerized Forms Management System)	○	○	○	○	●	1081
DFI/FMS (Dealer Finance and Insurance/Forms Management System)	●	○	○	○	○	1419
EasyEntry Forms Management and Data Entry System	●	○	○	○	○	277
FMS-11/IAS	○	○	○	○	○	812
FMS-11/RSTS	○	●	○	○	○	813
FMS-11/RSX	○	○	●	○	○	1377
FMS-11/RT-11	○	○	○	●	○	1378
Form Driver	●	○	●	○	○	283
FORMAT (Forms Management Transaction System), Version 5.1	○	○	○	○	○	283
FORMATIX	○	○	●	○	○	814
FSG (Financial Statement Generator)	○	○	○	●	○	79
Grade Reporting	○	○	○	○	○	445
INDENT (Initial Data Entry)	○	○	○	●	○	816
INDENT/BASIC-PLUS-2 Programming Templates	○	○	●	○	○	287
LABELS: The Mailing List System	○	○	○	○	○	1091
Lyrix™ Word Processing System	○	○	○	○	●	1093
Marketab®	○	○	○	○	●	1236
Micro/RSX FMS-11 (Forms Management System)	○	○	○	○	○	824
Milldata	○	○	○	○	○	825
Mistress/32	○	○	○	○	○	828
PC-Forms	○	○	○	○	○	1386
PER-FORM™ (Personalized Form Letters)	○	○	○	○	○	1098
The Printer's Companion	○	○	○	○	○	1163
Q-FORM	○	○	○	○	○	1101
Q-OFFICE	○	○	○	○	○	1103
RDM (Responsive Data Manager)	○	○	○	○	○	329
RDM™ (Responsive Data Manager)	○	○	○	○	○	835
Reporter	○	○	○	○	○	134
ROLMAN III	○	○	○	○	○	456
RSTS/E INDENT	○	○	○	○	○	1388
SB-5 (System Builders-5)	○	○	○	○	○	337
SEARCH/PURGE — Mailing List Deduplication Program	○	○	○	○	○	1243
SEED DBMS (Data Base Management System)	○	○	○	○	○	838
SoffForms	○	○	○	○	○	340
TAM (Terminal Access Module)	○	○	○	○	○	203
TRAMP for RSX-11 and RT-11	○	○	○	○	○	353
Typist	○	○	○	○	○	1400
VF	○	○	○	○	○	1110
VFM (Viking Forms Manager)	○	○	○	○	○	359
VISUAL/menu	○	○	○	○	○	359
XFORM	○	○	○	○	○	362
Fund raising						
ARCHON: FUND-AL	○	○	○	○	○	797
Arts	○	○	○	○	○	162
Campaign Finance Program	○	○	○	○	○	654
CLASS — Education Alumni/Development System	○	○	○	○	○	437
DFRS (Donor Fund Raising System)	○	○	○	○	○	808
Fundraiser	○	○	○	○	○	814
SCRIPTORIUM II: Word/List Processing	○	○	○	○	○	1107

Games

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
3-Dimension Tic-Tac-Toe	○	○	●	○	○	160
3D-Tic-Tac	○	●	●	○	○	160
Adventure	○	○	●	●	○	160
Airplane Landing Simulation Game	○	○	○	●	○	160
Airplane Landing Simulation Game for the Professional 300	○	○	○	●	○	161
Arcade Game Package	○	○	●	○	○	161
BASIC Demonstration Package	○	●	●	●	○	162
Battle Ships	○	○	●	○	○	162
Blackjack for the MINC	○	○	○	○	○	163
Chess Ingenuity®	●	●	●	○	○	164
Choose	○	○	○	●	○	165
CHSMOV — Chess-Move Recorder on a VT55 or a VT105, Under MACRO-11	○	○	○	●	○	165
CHSSLV (Chess-Problem Solver)	○	○	○	●	○	166
Cycles	○	○	○	○	○	167
DIBOL Collection	○	●	○	○	○	275
Dungeon	○	●	●	○	○	167
Dungeon for RT-11	○	○	○	○	○	168
European MINC Package #8 — Games	○	○	○	○	○	168
Games, Puzzles, and Recreation-1	○	●	○	○	○	169
Games, Puzzles, and Recreation-2	○	●	○	○	○	169
Genral: The Great War Game	○	○	○	○	○	169
Hockey Game	○	●	●	○	○	170
Hornet: A Star-Trek Game	○	○	●	○	○	170
Master Mind for MINC BASIC or RT-11 BASIC	○	○	○	○	○	171
MM: A Mastermind Game	○	○	○	○	○	171
OSCAR: Conversational Computer	○	○	○	○	○	171
Othello	○	○	○	○	○	172
Pic-Pak: Computer Picture Collection	○	○	○	○	○	172
Reese BASIC	○	○	●	○	○	930
RSX-11 TECO with Buffered Typeout, VT52 Window Support, and Doctor Game	○	○	●	○	○	1389
Seven BASIC Games	○	●	●	○	○	172
Space Invasion	○	○	○	○	○	173
Space War for Cursor-Addressing CRTs	○	○	○	○	○	174
Star-Trek (SPACWR)	○	○	○	○	○	174
STAR.TREK (SPACWR)	○	○	○	○	○	174
TREK: A Space Game for RSTS/E	○	●	○	○	○	174
VTAG	○	○	○	○	○	175
VTPONG: RSX-11M Task to Play Pong, Using VT52 or VT55 Terminal	○	○	○	○	○	175
General ledger						
A-to-Z Compu-Share™ Accounting Family General Ledger	○	○	●	○	○	5
ABLE® Client Writeup System	○	●	○	○	○	8
ACCDIBSGL (Accountant DIBS General Ledger)	○	○	●	○	○	365
Accountant II General Ledger System	○	○	○	○	○	10
Accounting	○	●	○	○	○	614
Accounts Payable	○	○	●	○	○	11
Accounts Payable System	○	○	○	○	○	20
AMS (Asset Management Client Reporting System)	○	●	○	○	○	615
APPGEN General Ledger	○	○	○	○	○	37
Arts	○	○	○	○	○	162
Automated Voucher Payment System	○	○	○	○	○	735
Banking — General Applications	○	○	○	○	○	617
BARCS	○	○	○	○	○	1180
BOS/Planner	○	○	○	○	○	1079

1532 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Business Information System	o	o	•	o	o	619
C-11 General Ledger	•	•	•	•	o	41
C-11 Integrated Accounting Package	o	o	•	o	o	42
C-11 Property Manager Tracking System	o	o	•	•	o	1195
CAS.1 (General Ledger)	o	•	•	o	o	46
CLASS — Education Accounts Payable A/P System	o	•	•	o	o	436
Client Write-Up	o	•	•	o	o	52
COMPCARE (Comprehensive Care Centers)	o	•	•	o	o	746
Complete Accounting Package	o	•	•	o	o	54
CSI Business System	o	o	•	o	o	56
CSI General Ledger	o	o	•	o	o	56
DDP PAS (General Ledger)	o	•	•	•	o	59
DIBS-11	o	•	•	o	o	62
DIBS-11/CTS-300	o	o	o	o	o	63
Evets Accounting Systems	o	o	o	•	o	64
FACS — General Ledger/Job Costing	o	•	•	o	o	67
FACS — Patronage Accounting	o	•	•	o	o	628
Fiscal Accounting	o	•	•	o	o	68
Flexware General Ledger	o	o	o	o	o	75
Forced Closed Accounts	o	o	o	•	o	632
FPS (Fruit Packing System)	o	•	•	•	o	154
General Ledger	o	•	•	o	o	79
General Ledger	o	•	•	•	o	80
General Ledger	o	o	o	o	o	80
General Ledger	o	o	•	o	o	81
General Ledger	o	•	•	o	o	81
General Ledger	o	•	•	•	o	82
General Ledger	o	o	o	o	o	82
General Ledger	o	o	o	o	•	83
General Ledger	o	•	•	•	o	84
General Ledger	o	•	•	o	o	84
General Ledger	o	•	•	o	o	85
General Ledger	o	o	o	•	o	634
General Ledger	o	•	•	•	o	947
General Ledger and Financial Reporting	•	•	•	o	o	85
General Ledger and Financial Reporting	o	•	•	o	o	86
General Ledger, Budgeting, and Checkwriter	o	o	o	o	o	635
General Ledger System	o	•	•	o	o	87
General Ledger System	o	•	•	o	o	1184
GL Eleven	o	•	•	o	o	87
G/L (General Ledger)	o	•	•	o	o	88
G/L (General Ledger), MCBA, Inc.	o	•	•	•	o	88
GLS (General Ledger System)	o	•	•	o	o	754
Idaho Falls Payroll System	o	•	•	o	o	89
IMPCON-FMS	o	•	•	o	o	90
IMPCON (Inventory Management and Production Control System) ..	o	•	•	•	o	1012
Insurance Agency Package	o	o	o	•	o	848
Integrated Business Software	o	o	o	•	o	90
InterGL™	o	o	o	o	o	92
LT/AMS — Financial Management for Long-Term-Care Facilities	o	•	•	o	o	765
MANAGE — Data Base Management System	o	•	•	o	o	94
MAXX A Management Accounting System	o	•	•	o	o	95
MBS GL (Manus Business Systems General Ledger)	o	•	•	•	o	97
MGL-11 (Municipal General Ledger and Financial Reporting)	o	•	•	•	o	662
MJA™ General Ledger for the PRO 350	•	o	o	o	o	99
MUNIS (Municipal Information Systems)	o	o	•	o	o	663
Mutual Insurance Processing System	o	o	o	•	o	849
NHIS (Nursing Home Information System)	o	o	o	o	o	776

	P/OS	R/ST	R/SX	RT-11	ULTRIX-11	Page
Payroll	○	●	○	○	○	107
Perspective/700 General Ledger	○	●	○	○	○	117
Pioneer COMMAND General Ledger Module	○	●	○	○	○	119
Plycom Core Accounting Systems	○	○	○	○	○	120
PM27 Accounts Payable	○	●	○	●	○	121
PM28 General Ledger/Financial Reporting	○	○	○	○	○	122
PMS (Property Management System)	○	○	○	○	○	1198
Pro-Accountant: Modular Integrated Accounting System	●	●	●	○	○	123
PRO-IV General Ledger with Financial Report Writer	●	○	○	○	○	125
ProBiz™ General Ledger	○	○	○	○	○	129
REA Accounting Software	○	○	○	○	●	1187
Sauer Library	○	○	○	○	○	136
School Fiscal Accounting	○	○	○	○	○	458
SGENLED (General Ledger Package)	○	○	○	○	○	136
Suspense Ledgers	○	○	○	○	○	137
TAPS (Transportation Accounting Packages)	○	○	○	○	○	1423
TBS Accounts Payable System	○	○	○	○	○	137
TBS General Ledger System	○	○	○	○	○	139
Timeline General Ledger and Financial Reporting	○	○	○	○	○	143
Treasurer's General Ledger and Warrant Reconciliation	○	○	○	○	○	144
TRON Accounts Receivable	○	○	○	○	○	145
TRON General Ledger	○	○	○	○	○	146
UDS IAS (Insurance Accounting System)	○	○	○	○	○	851
UDS PMAS (Property Management Accounting System)	○	○	○	○	○	1203
UDS REAS (Real Estate Accounting System)	○	○	○	○	○	1204
ZIN	○	○	○	○	○	147

Geoscience

Automated Powder Diffraction Data Collection and Analysis	○	○	○	○	○	1208
Chanel	○	○	○	○	○	477
ERDAS Image Processing and Geographic Information System	○	○	○	○	○	423
ES-LOG	○	○	○	○	○	424
Lambert Geodetic Conversion	○	○	○	○	○	507
RCPULT	○	○	○	○	○	522
SDP (Seismic Data Processing)	○	○	○	○	○	1225
SURVEY: Data Reduction and Plotting for Surveyor's Field Data	○	○	○	○	○	539

Government

BAS (Budgetary Accounting System)	○	○	○	○	○	39
Housing Authority — Section 8	○	○	○	○	○	1196
Housing Authority Tenant Accounting	○	○	○	○	○	1197
POM/T (Purchase Order Management/Tendering System)	○	○	○	○	○	644
PPBS: Budgeting/GL/AR/AP	○	○	○	○	○	645
RAS (Receivable Accounting System)	○	○	○	○	○	133
School Payroll Package	○	○	○	○	○	459
Suspect-Identification System	○	○	○	○	○	952
Wood Beam Check	○	○	○	○	○	546

Graphics

ABCON (Automated Batch Control)	○	○	○	○	○	980
ASA PMS (Project Management System)	○	○	○	○	○	960
Basic Image-Processing System for CAT Scans	○	○	○	○	○	737
C EXECUTIVE, Release 2.0	○	○	○	○	○	1115
CADA-1983 (Computer-Assisted Data Analysis Monitor)	○	○	○	○	○	433
CADBIRD II	○	○	○	○	○	474
CAPS — Section Properties Program	○	○	○	○	○	475
CDIG — Graphics Digitizing Program	○	○	○	○	○	476
CHROM (Chromatography Graphics and Analysis)	○	○	○	○	○	1208
Civil Library	○	○	○	○	○	478

1534 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
CLENS — Automotive Head Lamp Design Code	○	●	○	○	○	479
Cobra	○	○	●	○	○	214
CPLLOT — Graphics Plotter Program	○	○	○	○	○	484
CSEAT — Seat Frame Analysis Code	○	○	●	○	○	486
Csharp Realtime Toolkit	○	○	○	○	○	271
D16 and ROTA Programs for GAMMA-11	○	○	○	●	○	749
Design Graphix™	●	○	●	○	○	489
DIBOL ACCEPT/DISPLAY Subroutines	○	○	●	○	○	877
ELAN-TR (Transient Radiation)	○	○	○	○	○	492
Engineering Science Program Exchange	○	○	○	○	○	443
EPS (Electronic Publishing System)	○	○	○	●	○	811
EQUINOX™	○	○	○	●	○	1003
ERDAS Image Processing and Geographic Information System	○	○	○	○	○	423
European MINC Package #7 — Instruments	○	○	○	○	●	493
FISH: Post- and Interspike Interval Analysis	○	○	○	○	●	1212
FPS (Fundamental Plotting Subroutines)	○	○	○	○	○	496
Functional Subroutines	○	○	○	○	●	496
GBS (Genesys Banking System)	○	○	○	○	○	634
GPUC (General-Purpose User Command Package)	○	○	○	○	○	497
Graphix-11™	○	○	●	○	○	1088
Grid	○	○	●	○	○	498
HCR/BASIC	○	○	○	○	○	890
Holes	○	○	○	●	○	501
I*S*P* (Interactive Signal Processor)	○	○	○	○	○	502
IB Graph	○	○	○	○	○	1089
ICLAYOUT	○	○	○	○	○	503
IDL (Interactive Data Language)	○	○	○	○	○	1216
IGOR Document Preparation System	○	○	○	○	○	1381
ITEX/Q	○	○	○	○	○	239
LG.SYS: Centronics 739 Serial Printer Handler	○	○	○	○	○	1322
Linwood (Linear Least-Squares Curve-Fitting Program)	○	○	○	○	○	508
Logo for the Professional 300	○	○	○	○	○	449
MBP (Metal Building Program)	○	○	○	○	○	510
MINC BASIC	○	○	○	○	○	910
MINIMOVIE.BYU	○	○	○	○	○	511
Mistress Relational Database Management System	○	○	○	○	○	827
NCTAPE (Numerical Control Tape Processing System)	○	○	○	○	○	1027
NYPLAN	○	○	○	○	○	640
PC4010	○	○	○	○	○	1330
PLANS: A Program to Plot Hard Copy on the Versatec Printer	○	○	○	○	○	246
P/OS Diskette, Hard Disk, and Hard Disk (Arabic)	○	○	○	○	○	1132
PRO/Applications Starter Kit for Diskette or Hard Disk	○	○	○	○	○	1164
PRO/NAPLPS	○	○	○	○	○	1337
PRO/Producer Tool Kit	○	○	○	○	○	326
PROSE-PLUS	○	○	○	○	○	1387
PRO/Tool Kit	○	○	○	○	○	327
PRO/UNIX™ Base System Kit	○	○	○	○	○	1135
RETCON	○	○	○	○	○	836
RSTS Performance Measurement Package	○	○	○	○	○	199
RSX-11M/FORTRAN Enhancement Package for MINC	○	○	○	○	○	1141
RT-11 on the Professional	○	○	○	○	○	1143
RT-11/FORTRAN Support for Data Acquisition and Display on a VT105	○	○	○	○	○	250
RUCAPS (Really Universal Computer-Aided Production System)	○	○	○	○	○	526
SALGLA (Salivary Gland Analysis)	○	○	○	○	○	788
SETCON: Process Control Software for Industrial Processes	○	○	○	○	○	1053
SLEEP: Programs of Analysis of Sleep-Wakefulness Data	○	○	○	○	○	788
SOLUTIONS DECK Master	○	○	○	○	○	343

	PDS	RSTS	RFX	RT-11	ULTRIX-11	Page
SOLUTIONS DECK Transaction	○	●	○	○	○	344
STI-ANIMATION	○	○	●	○	○	535
SURVEY: Data Reduction and Plotting for Surveyor's Field Data	○	○	●	○	○	539
Synergy	●	○	○	○	○	1164
TOPMAN (Total Planning and Management), Version 2.0	○	○	●	○	○	974
TTLIB: VT100 Library Routines	○	○	○	●	○	354
TTLIB: VT100 Library for the Professional 300	○	○	○	○	○	354
TXTWRT: An RT-11 Text Formatting Program	○	○	○	●	○	1400
TYPSET — Digitized Character Subroutines	○	○	○	●	○	1401
UltraCalc®	○	○	○	○	●	1164
USERBASICS	●	○	○	○	○	358
VANGO	○	○	●	○	○	544
VIDEOPRO	○	○	○	○	●	1356
VIOS (Video Input/Output and Processing Software)	○	○	○	●	○	254
VSV-01 Device Driver for RSX-11M	○	○	○	●	○	793
VSV11-M/M-PLUS Driver	○	○	○	○	○	1357
VTUMC (Virtual Terminal Routine for UNIVAC 1100 Systems)	○	○	○	○	●	1360
ZCHART — Business Graphics	○	○	○	○	○	1112
Health care						
CHROMPAK (Chromatography Analysis Package)	○	○	○	●	○	1209
CLIN-TEAMS®	○	○	○	○	○	1210
General Ledger	○	○	○	○	○	80
M (MUMPS)	○	○	○	○	○	1123
PRO/Laboratory Subroutine Package	●	○	○	○	○	248
RIM (Relationship Impact Model)	○	○	○	○	○	1254
TSH/Ordinary Insurance Administration	○	○	○	○	○	850
Import/export						
Canadian Mortgage Calculation Program	○	○	○	○	○	622
EXDOC (Export Documentation System)	○	○	○	○	○	381
Export Package	○	○	○	○	○	382
International Trade Software	○	○	○	○	○	1410
Information management						
A-CLASS	○	○	○	○	○	978
A-to-Z Integrated System	○	○	○	○	○	1077
AAAMIS (Advertising Agency's Accounting and Management Information System)	○	○	○	○	○	1230
Abax Mailing Label System	○	○	○	○	○	1077
ACCESS Financial Systems	○	○	○	○	○	614
ADE/RSTS: Information Management for Office Professionals	○	○	○	○	○	1160
AGVS and ASRS Flexible Manufacturing Systems	○	○	○	○	○	981
Aide-De-Camp™ Software Engineering Environment	○	○	○	○	○	258
Alphabetical Directory Sort	○	○	○	○	○	559
Anatomic Pathology	○	○	○	○	○	734
C-11 Human Resource Management	○	○	○	○	○	1169
CAIRS Special Librarian	○	○	○	○	○	954
CAMIS (Consultants' Accounting and Management Information System)	○	○	○	○	○	961
CARE/DM	○	○	○	○	○	741
CLASS — Education Admission System	○	○	○	○	○	436
CLASS — Education Registration System	○	○	○	○	○	438
CLASS — IMPRS	○	○	○	○	○	439
CLASS (College-Level Administrative Software System)	○	○	○	○	○	440
Clientrac™	○	○	○	○	○	479
CO-LAB	○	○	○	○	○	745
Comprehensive Blood Bank System	○	○	○	○	○	746
Conflict of Interest	○	○	○	○	○	946

1536 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Contractor Cost Accounting System	○	●	○	○	○	216
Culinary Operations Information System	○	○	○	○	●	1248
Customer Service Inquiry System	○	○	●	○	○	1182
Date*Book	○	○	●	○	○	1083
Dispatch	○	○	○	○	○	1248
Docket/Calendar System	○	○	○	●	○	946
Dog License System	○	○	○	●	○	655
Drawing Register	○	○	○	●	○	682
EasyEntry Forms Management and Data Entry System	○	○	○	○	○	277
Easypost Insurance Agency Management System	○	○	○	○	○	846
Electrical Contracting	○	○	○	○	○	1182
Electrical Repair and Paging	○	○	○	○	○	1183
EMIS (Equipment Management Information System)	○	○	○	○	○	1420
EQUUS-11	○	○	○	○	○	151
FACTS V Systems of Tire Control	○	○	○	○	○	628
FCI Building and Zoning System	○	○	○	○	○	655
FCI Fire System	○	○	○	○	○	656
FCI Police System	○	○	○	○	○	657
FINGRAPH	○	○	○	○	○	686
Government-11	○	○	○	○	○	659
GS-400 Circulation Control System	○	○	○	○	○	954
HDC+ (Hospital Data Communication)	○	○	○	○	○	755
HIS (Hospital Information System)	○	○	○	○	○	757
Hospitality Management System	○	○	○	○	○	1249
IBMMvs/DECnet Gateway	○	○	○	○	○	1311
IIAAS (Independent Insurance Agency Accounting System)	○	○	○	○	○	847
Integrated Manufacturing and Financial System, Version 4.0	○	○	○	○	○	1012
International Trade Software	○	○	○	○	○	1410
ISAM Subroutines Library	○	○	○	○	○	578
ISAS (Interactive Student Accounting System)	○	○	○	○	○	447
JSI/MIS (John Snow, Inc./Medical Information System)	○	○	○	○	○	762
Laboratory Data Management System	○	○	○	○	○	763
Law Firm Management System	○	○	○	○	○	948
Leadership Series™ Hospital Information System	○	○	○	○	○	765
LEAP (Library Electronic Acquisition Program)	○	○	○	○	○	955
Log and Lumber Inventory Systems	○	○	○	○	○	424
MAMS (Municipal Accounting Management System)	○	○	○	○	○	660
Manufacturing Systems	○	○	○	○	○	1019
Medical Records System	○	○	○	○	○	769
MESTAMED	○	○	○	○	○	772
MIS (Management Information System)	○	○	○	○	○	583
MOCS (Master Operator Control System)	○	○	○	○	○	192
Multi-Tester System	○	○	○	○	○	450
Multilab — Comprehensive Clinical Laboratory Information System	○	○	○	○	○	774
Mutual Insurance Processing System	○	○	○	○	○	849
Officeman	○	○	○	○	○	1097
Permanent Placement Personnel System	○	○	○	○	○	1173
PET (Performance Evaluation and Tuning)	○	○	○	○	○	193
PICAM	○	○	○	○	○	1032
P/OS Diskette, Hard Disk, and Hard Disk (Arabic)	○	○	○	○	○	1132
Practice Management System	○	○	○	○	○	782
PRO-RDM (Responsive Data Manager)	○	○	○	○	○	325
PRO/Office Workstation	○	○	○	○	○	1099
QUEST Graphical and Text Information System	○	○	○	○	○	717
RABBIT-1 Resource Accounting, Auditing, and Billing System	○	○	○	○	○	194
RABBIT-2	○	○	○	○	○	195
RAFT (Revenue Accounting for Truckers)	○	○	○	○	○	1422
RBS (Radiology Billing System)	○	○	○	○	○	786

	P/OS	RSTS	RSC	RT-11	ULTRIX-11	Page
REACT	o	o	o	o	o	1187
Real Information	o	o	o	o	o	1200
REALISE Real Estate Office Automation System	o	o	o	o	o	1201
RECAP	o	o	o	o	o	665
Registration	o	o	o	o	o	455
RIM (Relationship Impact Model)	o	o	o	o	o	1254
RxCom	o	o	o	o	o	787
Scribe Subscription and Merchandise Fulfillment System	o	o	o	o	o	1071
SEARCH/PURGE — Mailing List Deduplication Program	o	o	o	o	o	1243
Shop Floor Control Systems	o	o	o	o	o	407
SISINF	o	o	o	o	o	339
SL-11 Amusement Devices Accounting System	o	o	o	o	o	173
Suspect-Identification System	o	o	o	o	o	952
TACT (Total Agribusiness Computer System)	o	o	o	o	o	157
TelEquip	o	o	o	o	o	1188
Temporary Services Personnel System	o	o	o	o	o	1176
Title System	o	o	o	o	o	666
Transportation/Airline/Airport Management Information System	o	o	o	o	o	1423
Trouble Ticket Reporting System	o	o	o	o	o	1188
TSH/CRIS — Credit Insurance Administration	o	o	o	o	o	850
UDS IAS (Insurance Accounting System)	o	o	o	o	o	851
Utility-11	o	o	o	o	o	1189
VCC (The Video Outlet Control Center)	o	o	o	o	o	1415
Vet System/2000	o	o	o	o	o	792
Vote-R (Voter Registration Package)	o	o	o	o	o	667
Voter-11	o	o	o	o	o	668
Voter Registration System	o	o	o	o	o	669
Warehousing Systems	o	o	o	o	o	412
Wayne Medical System	o	o	o	o	o	793
Word List Processing	o	o	o	o	o	1111
Instrumentation						
AUTO-CHEM	o	o	o	o	o	468
CAMAC Support Library for Industrial Systems	o	o	o	o	o	266
Computer Guided Probe — Electronic Fault Isolation Package	o	o	o	o	o	482
CPLIB	o	o	o	o	o	269
EPR (Electron Paramagnetic Resonance) Package	o	o	o	o	o	236
European MINC Package #7 — Instruments	o	o	o	o	o	493
FORTTRAN/RT-11 Laboratory Extension	o	o	o	o	o	238
Gamma Spectroscopy Applications Package	o	o	o	o	o	1214
LabCom + *	o	o	o	o	o	763
MINC/BASIC, MINC/FORTTRAN Support for the DP101 Plotter	o	o	o	o	o	705
Multilab — Comprehensive Clinical Laboratory Information System	o	o	o	o	o	774
Nal Data Reduction	o	o	o	o	o	1220
Neutron Activation Analysis	o	o	o	o	o	1220
Nicolet 1090 Digital Oscilloscope Handler and Interface to PDP-11	o	o	o	o	o	244
OS/FT (File System)	o	o	o	o	o	585
OS/RT (Real Time O.S. Kernel)	o	o	o	o	o	1130
PC/DBS (Process Control Data Base System)	o	o	o	o	o	1030
PEAK-11/M	o	o	o	o	o	1222
PMCS (Process Monitoring and Control System)	o	o	o	o	o	1035
QBLIB (CAMAC Subroutine Library)	o	o	o	o	o	1222
QMS PROGRAMS® Computer Software/Instrument Calibration	o	o	o	o	o	1043
ROMIS™ (Rotating Machinery Information System) Large Host	o	o	o	o	o	555
S220 CANSCAN	o	o	o	o	o	526
S235/S535 GAMMA-M	o	o	o	o	o	527
S240/S540 SPECTRAN-F	o	o	o	o	o	527
S245/S545 Quality Assurance Software	o	o	o	o	o	528

1538 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
S531A/S631A ABACOS II	○	○	●	○	○	1224
S541/S641 APOGEE	○	○	●	○	○	528
S543 NAA	○	○	●	○	○	529
Sunquest Laboratory System	○	○	○	○	○	790
Insurance						
Billing and Accounts Receivable System	○	○	○	○	○	737
JSI/MIS (John Snow, Inc./Medical Information System)	○	○	○	○	●	762
MEDISYS	○	○	●	○	○	771
MESTAMED	○	●	○	○	○	772
Paramedics Billing	○	●	○	○	○	776
PAS-11/D (Professional Accounting Series-11/Dental)	○	●	○	○	○	777
PAS-11/M (Professional Accounting Series-11/Medical)	○	○	●	○	○	777
PICALC: Lifetime Earnings Estimation	○	○	○	●	○	951
PLANFAX Actuarial System	○	○	○	○	●	643
Practice Management System	○	●	○	○	○	782
Radiology Accounts Receivable Management System	○	○	○	●	○	785
Radiology Billing	○	●	○	○	○	785
Third-Party Claim Payment and Billing System	○	○	○	○	○	791
Interpreters						
APL-11	○	○	●	○	○	857
APL-11 for RSTS/E	○	●	○	○	○	857
APL-11 for RT-11	○	○	○	●	○	858
BASIC-11 Extension Routines	○	○	○	○	●	860
BASIC-PLUS-2 for IAS	○	○	○	○	○	862
CALC: An Interactive Computer Language with Unlimited Numerical Precision	○	○	○	●	○	1208
CLIP (Command Language Interpreter)	○	●	○	○	○	268
Extension Routines for MU BASIC	○	○	○	○	●	880
HCR/BASIC	○	○	○	○	○	890
LISP11 for RSTS	○	●	○	○	○	894
LISP11 for RT-11	○	○	○	●	○	895
MACRO Package for MACRO-11 to Assemble Motorola 680X Code ...	○	○	○	●	○	900
MARGOT: A MACRO-Based Generator of Command Language Interpreters	○	○	●	○	○	904
MIIS Standard	○	○	○	○	○	1125
MIIS/MAGIC (MEDITECH Interpretive Information System)	○	○	○	○	○	1126
MU BASIC-11/RT-11	○	○	○	●	○	913
NDTRAN2	○	○	●	○	○	513
PEP (Program Editor and Processor) Programming System	○	○	○	○	○	918
Prolog-1 (Programming in Logic)	○	●	●	○	○	325
PRO/Producer Tool Kit	●	○	○	○	○	326
Reese BASIC	○	○	●	○	○	930
RSX-11 BASIC	○	○	●	○	○	932
RSX-11 FOCAL	○	○	○	○	●	933
RSX-11 Magtape Cornucopia	○	○	○	○	○	1138
RT/EMT (RT-11 Emulator)	○	○	○	○	○	1146
S-TRAN™ BASIC to C Translator	○	○	○	○	●	335
Safe C™ Interpreter	○	○	○	○	●	936
SIBOL (Software Ireland Business-Oriented Language)	○	○	○	○	○	938
VLISP-11	○	○	○	●	○	943
Inventory						
6600 Plant Management System	○	○	●	○	○	978
A-to-Z Compu-Share™ Accounting Family Inventory Control	○	○	○	○	○	6
Abax Depreciation System	○	○	●	○	○	7
Abax Rental Management System	○	○	○	○	●	1246
ABC/Inventory System	○	○	○	○	○	979

	P/OS	RST	RSX	RT-11	ULTRIX-11	Page
ACCDIBSIO (Accountant DIBS Inventory and Order Entry)	○	●	○	○	○	365
Accountant II Inventory Control System	○	○	●	○	○	367
Accountant II Order Entry System	○	○	●	○	○	367
Accountant II Purchasing System	○	○	○	○	○	368
Administrator 4/11	○	○	●	○	○	615
AIM (Automatic Inventory Management)	○	○	●	○	○	368
AIM/FOD (Accounting Information Manager for Fuel Oil Delivery) ...	○	○	○	○	○	368
AIMS (Advanced Integrated Manufacturing Systems)	○	○	○	○	○	983
APPGEN Inventory/Order Entry	○	○	○	○	○	369
APR (Automated Production Reporting) System	○	○	○	○	○	422
ATOMS (Advanced Textile Operations Management Systems)	○	○	●	○	○	985
AUTO-BOP	○	○	○	○	○	985
Automatic Business Control System	○	○	●	○	○	370
Automotive System	○	○	●	○	○	1418
Bar-Coded Systems	○	○	○	○	●	800
Blood Bank Module: Leadership Series™	○	○	○	○	○	737
C-11 Integrated Accounting Package	○	○	○	○	○	42
C-11 Inventory	●	●	●	○	○	43
C-11 Inventory I	●	●	●	○	○	43
C-Chart System — Medical Accounting, Inventory	○	○	○	○	○	738
CAPS	○	○	○	○	○	740
CAS (Comprehensive Accounting System)	○	○	○	○	○	45
CAS.5 (Inventory Management)	○	○	○	○	○	49
CFMS (Computerized Forms Management System)	○	○	○	○	●	1081
CHIPS	○	○	○	○	○	371
COMADS (Computer-Aided Dispatching)	○	○	○	○	○	215
Concept Inventory Management	○	○	○	○	○	995
Concept Material Requirements Planning	○	○	○	○	○	996
ConTrol — Materials Management Information System	○	○	○	○	○	748
Court Club Management System	○	○	○	○	○	1248
Culinary Operations Information System	○	○	○	○	○	1248
DACMS (Distribution and Cash Management System)	○	○	○	○	○	372
Daymark Wholesale Distribution System	○	○	○	○	○	372
DB*SCAN	○	○	○	○	○	234
DDP ICSF (Inventory Control System)	○	○	○	○	○	58
DDP PCSF (Purchasing Control System)	○	○	○	○	○	61
DIBS-11 Order Entry/Inventory Management for CTS-300	○	○	○	○	○	62
DIBS-11 Order Entry/Inventory Management for RSTS/E	○	○	○	○	○	63
Distribusyst (Distribution Management System)	○	○	○	○	○	374
Distribution Management System	○	○	○	○	○	375
Distribution System (Wholesale/Retail)	○	○	○	○	○	376
DOVETAIL JOM (Job-Oriented Manufacturer)	○	○	○	○	○	1001
DTRO CDMS (Comprehensive Distribution Management System)	○	○	○	○	○	377
DTRO Inventory Management System	○	○	○	○	○	378
Electronic Component Distribution System	○	○	○	○	○	380
EMDA's Super Car Rental and Control System	○	○	○	○	○	1419
EMIS (Equipment Management Information System)	○	○	○	○	○	1420
Enterprise Distribution	○	○	○	○	○	381
FACS — Inventory and Order Entry	○	○	○	○	○	382
FACTS V Systems of Tire Control	○	○	○	○	○	628
FIFO: FIFO Inventory	○	○	○	○	○	68
FINCON (Financial Control System)	○	○	○	○	○	1004
Fixed-Asset Control	○	○	○	○	○	551
Flexware Inventory Control	○	○	○	○	○	76
Flight Watch	○	○	○	○	○	1421
FMS (Facility Management System)	○	○	○	○	○	551
FPS (Fruit Packing System)	○	○	○	○	○	154
FUTURETECH — Mail Order Processing System	○	○	○	○	○	1235

1540 Keyword Cross-Reference Guide

	PDS	RSTS	RKX	RT-11	ULTRIX-11	Page
GBMS (General Business Management System)	o	o	o	●	o	815
GIMS (Government Information Management System)	o	●	o	o	o	658
Group Purchasing System	o	o	o	o	o	754
H-MRP	o	o	o	o	●	1008
H-STORE	o	o	o	o	●	1009
HIMS (Hospitality Information Management System)	o	●	o	o	o	1249
ICAMS (Inventory Control and Management System)	o	●	o	o	o	385
ICAS 1123-Plus (Inventory Control Accounting System)	o	o	●	o	o	1409
Identopick	o	o	●	o	o	385
I/M (Inventory Management), MCBA, Inc.	o	●	●	o	o	1010
IMCS (Interactive Manufacturing Control Systems)	o	●	●	o	o	1011
IMS-8 (Integrated Mill-Management System-8)	o	o	o	o	o	155
IN-TOUCH™	o	●	o	o	o	1409
Integrated Business Software	o	o	o	●	o	90
Integrated Inventory Management System	o	●	o	o	o	636
InteRx™	o	o	o	o	o	760
INVENT: Inventory for Manufacturing Companies	o	●	●	o	o	1013
Inventory	o	●	o	o	o	93
Inventory	o	o	o	●	o	386
Inventory	o	●	o	o	o	386
Inventory Control	o	●	●	o	o	387
Inventory Control	o	o	o	o	●	388
Inventory Control	o	o	o	●	o	1014
Inventory Management	o	●	●	o	o	1014
INVSIM (Inventory Simulation)	o	●	o	o	o	818
IOI: Order Entry	o	●	●	●	o	93
IV-11 Inventory Control System	o	●	o	o	o	221
Job Costing	o	●	●	o	o	1015
Job Shop Management	o	o	o	o	o	1251
KEREN	o	●	o	o	o	1069
Laundry Module: Leadership Series™	o	o	o	o	o	764
LEDGR	o	o	o	●	o	820
Log and Lumber Inventory Systems	o	o	o	o	●	424
MAILHOUSE™	o	●	o	o	o	1410
Maintenance Management — System 600	o	o	o	o	o	553
Manufacturing Control System	o	o	●	●	●	1019
MAXX D Accounting and Management System for the Distribution Industry	o	●	o	o	o	388
MBS ASR (Manus Business Systems Automatic Stock Replenishment)	o	●	o	o	o	389
MBS IM (Manus Business Systems Inventory Management)	o	o	●	o	o	389
MBS PO (Manus Business Systems Purchase Order Management)	o	o	●	o	o	391
MCS-3 (Manufacturing Control System)	o	o	o	o	o	1020
MDS-4	o	●	o	o	o	392
MINI-PHARM (Minicomputer Hospital Pharmacy Package)	o	o	o	o	o	772
MJA™ Order Entry/Inventory	●	o	o	o	o	99
MMS (Materials Management System)	o	o	●	o	o	1022
MMS-R Radio-Dispatched Material Management System	o	o	o	o	o	1023
MODS (Manus Oil Dealer System)	o	●	o	o	o	392
Multipharm	o	o	o	o	o	775
Multiuser Digital Accounting System	o	o	o	o	o	100
Office Supply/1000	o	●	o	o	o	1097
Oil Burner Service/Inventory	o	●	o	o	o	1252
OMS (Oil Movement System)	o	o	●	o	o	425
Order Eleven	o	●	o	o	o	393
Order Entry and Inventory	o	●	●	o	o	104
Order Entry System	o	●	o	o	o	395
Order Entry/Inventory	o	o	o	o	o	105

	P/OS	R/ST/S	R/SX	RT-11	ULTRIX-11	Page
Order Entry/Inventory Control	○	●	○	○	○	105
Order Processing System	○	●	○	○	○	397
Oscar	○	○	●	●	○	1029
PACKET: Bill of Materials for Manufacturing	○	○	●	○	○	1030
Papersoft	○	○	●	○	○	398
PBS (Produce Brokerage System)	○	○	●	○	○	156
PCO (Pest Control Operators Management System)	○	○	●	○	○	1252
PENQUIN™	○	○	○	●	○	399
Perspective/700 Bill of Materials System	○	○	●	○	○	1031
Perspective/700 General Ledger	○	○	○	○	○	117
Perspective/700 Inventory Management	○	○	○	○	○	399
PIC (Parts Inventory Control System)	○	○	●	○	○	401
PICS (Parts Inventory Control System)	○	○	○	●	○	1253
Pioneer COMMAND Inventory Management Module	○	○	●	○	○	401
Pioneer COMMAND Master Production Scheduling Module	○	○	○	○	○	1033
Pioneer COMMAND Material Requirements Planning Module	○	○	○	○	○	1034
PM32 Order Processing/Inventory/Sales Analysis	○	○	○	●	○	403
PMIS (Plant Management Information System)	○	○	○	○	○	553
Point of Sale	○	○	○	○	○	1411
POM/T (Purchase Order Management/Tendering System)	○	○	○	○	○	644
PRINCE (Production Information Center)	○	○	○	○	○	1037
PRN-1 Pharmacy Package	○	○	○	○	○	783
Pro-Accountant: Modular Integrated Accounting System	●	○	○	○	○	123
PRO-IV Inventory Control	●	○	○	○	○	125
ProBiz™ Job Costing/Work in Process	○	○	○	○	○	1039
ProBiz™ Order Processing and Inventory Control	○	○	○	○	○	404
ProBiz™ Purchasing Management	○	○	○	○	○	130
Produce Distribution System	○	○	○	○	○	156
Purchase and Supply Control	○	○	○	○	○	406
Purchase Order and Receiving	○	○	○	○	○	1040
QMS PROGRAMS® Computer Software/Finished Goods Release	○	○	○	○	○	1043
RADIO-OSCAR	○	○	○	○	○	784
RAM 12™	○	○	○	○	○	406
RCC Billing/Inventory System	○	○	○	○	○	1186
Rental Service System	○	○	○	○	○	1253
Retail Furniture System	○	○	○	○	○	1412
RxCom	○	○	○	○	○	787
School Business Administrator	○	○	○	○	○	457
Scribe Subscription and Merchandise Fulfillment System	○	○	○	○	○	1071
Shop Schedule and Machine Loading	○	○	○	○	○	1055
SIMS (Supplies Inventory Management System)	○	○	○	○	○	1107
SL-11 Amusement Devices Accounting System	○	○	○	○	○	173
Soft Drink Bottler's Package	○	○	○	○	○	408
Specialty Item and Furniture Store System	○	○	○	○	○	1413
Spectrum	○	○	○	○	○	788
SpiriTrak™	○	○	○	○	○	1413
Sporty	○	○	○	○	○	1414
Sprint	○	○	○	○	○	789
SSMS (Service Station Management System)	○	○	○	○	○	409
STACS (Serials Tracking and Control System)	○	○	○	○	○	956
TABS (Total Application for Building Suppliers)	○	○	○	○	○	224
TACT (Total Agribusiness Computer System)	○	○	○	○	○	157
TBS Order Entry System with Inventory Control, Billing, and Sales Analysis	○	○	○	○	○	410
TEC Manufacturing System	○	○	○	○	○	1059
TelEquip	○	○	○	○	○	1188
TIP (Tankage Inventory and Yields Programs)	○	○	○	○	○	426
TMS/2000 Tool Management System	○	○	○	○	○	1059

1542 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
TOLAS	○	●	○	○	○	410
Tool Inventory	○	○	○	○	●	1060
TPINS (Times Publishing Interactive Newsprint Inventory System) ..	○	○	○	○	○	1073
TRIMS (Tire Dealers and Retreaders Information Management System)	○	○	○	○	○	411
UDS Real Estate Sales Analysis	○	○	○	○	○	1204
ULISYS	○	○	○	○	○	957
VantagePoint	○	○	○	○	○	1414
VCC (The Video Outlet Control Center)	○	○	○	○	○	1415
VET-11	○	○	○	○	○	792
Warehousing Systems	○	○	○	○	○	412
Warehousing/Order Entry/Inventory/Purchasing	○	○	○	○	○	412
WDS/2 (Warehouse Distributor System)	○	○	○	○	○	413
Welding Distributor System — TIMS BASIC+, 2 + 2, and Super + ...	○	○	○	○	○	414
WHOLESALE-11	○	○	○	○	○	415
Wholesale Lumber Management	○	○	○	○	○	1244
Wholesale/Liquid Product Inventory	○	○	○	○	○	415
Wine and Beverage Distribution System	○	○	○	○	○	417
XK-11	○	○	○	○	○	418
Zip-Check	○	○	○	○	○	418
Zip-Pick™ Warehouse Automation System	○	○	○	○	○	419
Zip-Stock™	●	○	○	○	○	420
Investments						
AMS (Asset Management Client Reporting System)	○	○	○	○	○	615
BARON: Principal, Payment, Amortization, and Interest Information ..	○	○	○	○	○	618
County Treasurer's Investment Management	○	○	○	○	○	624
On-Line Share Registration	○	○	○	○	○	641
PAX	○	○	○	○	○	642
PORTSIS™ Investment Management	○	○	○	○	○	644
PRO-IV Fixed Assets	○	○	○	○	○	124
TSI P-M (Project Management)	○	○	○	○	○	1203
Language enhancers						
86/PC (PL/M-86) Compiler	○	○	○	○	○	854
ALGOL for RT-11	○	○	○	○	○	856
BASIC-11 Extension Routines	○	○	○	○	○	860
BASIC-11/RT-11	○	○	○	○	○	861
BASIC-PLUS-2 for IAS	○	○	○	○	○	862
BASIC-PLUS-2 for RSTS/E	○	○	○	○	○	862
BASIC-PLUS-2 for RSX-11M and RSX-11M-PLUS	○	○	○	○	○	863
BASTOC™ (BASIC to C)	○	○	○	○	○	864
Cephes Math Function Library	○	○	○	○	○	476
COBOL	○	○	○	○	○	871
COBOL-81/RSTS/E	○	○	○	○	○	871
COBOL-81/RSX	○	○	○	○	○	872
COBOL-Plus	○	○	○	○	○	873
Control C Trap Handler for FORTRAN	○	○	○	○	○	873
DBMS-11	○	○	○	○	○	807
DISASM.BAS MACRO Disassembler	○	○	○	○	○	878
DISASO: Object Module Disassembler	○	○	○	○	○	878
DSM-11 Translator	○	○	○	○	○	879
EXPAND	○	○	○	○	○	880
Extension Routines for MU BASIC	○	○	○	○	○	880
FLECS (FORTRAN Language with Extended Control Structures)	○	○	○	○	○	882
FORODT: FORTRAN Debug Routine for RT-11	○	○	○	○	○	284
FORTRAN-77/IAS	○	○	○	○	○	883
FORTRAN-77/RSTS/E	○	○	○	○	○	884
FORTRAN-77/RSX	○	○	○	○	○	885

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
FORTRAN-77/RT-11	○	○	○	●	○	886
FORTRAN Interface to IAS Subtasking	○	○	○	○	○	886
FORTRAN IV/IAS	○	○	○	○	○	887
FORTRAN IV/RSTS/E	○	●	○	○	○	887
FORTRAN IV/RSX	○	○	●	○	○	888
FORTRAN IV/RT-11	○	○	○	●	○	889
HCR/BASIC	○	○	○	○	○	890
IFTRAN Precompiler for PDP-11 FORTRAN	○	○	●	○	○	891
INDEX: FORTRAN Cross-Referencer	○	○	○	●	○	892
INDEX: FORTRAN Cross-Referencer	○	○	○	●	○	892
LIB.FOR Library Routines	○	○	○	○	●	291
LISP for RSX-11	○	○	○	○	●	894
MACRO Package for MACRO-11 to Assemble INTEL 8008 Code	○	○	○	○	●	900
MACRO Package for MACRO-11 to Assemble INTEL 8080 Code	○	○	○	○	●	900
MACRO Package for MACRO-11 to Assemble Motorola 680X Code	○	○	○	○	●	900
MACRO Package for MACRO-11 to Assemble Signetics 2650 Code	○	○	○	○	●	901
MACSP (MACRO-11/SP Structured Programming Macros)	○	○	○	○	●	902
MARGOT: A MACRO-Based Generator of Command Language Interpreters	○	○	○	○	○	904
Micro Concurrent Pascal (mCP) Cross-Compiler	○	○	○	○	○	904
Micro/RSTS BASIC-PLUS-2	○	○	○	○	○	906
Micro/RSTS FORTRAN-77	○	○	○	○	○	907
Micro/RSX BASIC-PLUS-2	○	○	○	○	○	907
Micro/RSX COBOL-81	○	○	○	○	○	908
Micro/RSX DIBOL	○	○	○	○	○	909
Micro/RSX FORTRAN-77	○	○	○	○	○	909
Micro/RSX FORTRAN-77 DEBUG	○	○	○	○	○	318
Micro/RSX PDP-11 Pascal	○	○	○	○	○	910
MINC BASIC	○	○	○	○	○	910
Mnemonic Dump	○	○	○	○	○	911
MPS Cross-Assembly Programs for RT-11	○	○	○	○	○	912
MRMLIB	○	○	○	○	○	912
MU BASIC-11/RT-11	○	○	○	○	○	913
ODT-11T	○	○	○	○	○	914
ORC: Object-to-MACRO Conversion	○	○	○	○	○	245
PAL8XR (PDP-8/Intersil 6100 Cross-Assembler Under RT-11)	○	○	○	○	○	914
Pascal Compiler	○	○	○	○	○	915
Pascal-xii	○	○	○	○	○	916
PRM-11 (Pascal Record Management-11)	○	○	○	○	○	919
PRO/COBOL-Plus™	○	○	○	○	○	921
Professional Host Tool Kit	○	○	○	○	○	922
Professional Host Tool Kit DIBOL	○	○	○	○	○	923
Professional Host Tool Kit Pascal	○	○	○	○	○	925
PRO/Tool Kit BASIC-PLUS-2	○	○	○	○	○	925
PRO/Tool Kit COBOL-81	○	○	○	○	○	926
PRO/Tool Kit Pascal	○	○	○	○	○	928
RASM (Reverse Assemblies for RT-11)	○	○	○	○	○	928
RATFOR: Structured FORTRAN Preprocessor	○	○	○	○	○	929
ReadCOBOL™	○	○	○	○	○	929
RSTS Libraries for Swedish Pascal	○	○	○	○	○	931
RSX-11 BASIC	○	○	○	○	○	932
RSX-11 FOCAL	○	○	○	○	○	933
RSX-11M-PLUS DIBOL	○	○	○	○	○	933
RT-11 V2.0/MU BASIC Utilities Package	○	○	○	○	○	334
RT-11/FORTRAN Enhancement Package for MINC (FEP)	○	○	○	○	○	1144
RT-NEWUSER V2.0	○	○	○	○	○	594
RT11/03 FORTRAN Extensions	○	○	○	○	○	934
Safe C™ Interpreter	○	○	○	○	○	936

1544 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
SAL-11 (Structured Assembly Language)	○	○	●	●	○	937
SpeedCOBOL™	○	●	●	●	●	939
UCSD Pascal® Compiler	○	○	○	○	○	941
Utility Routines ASCIB, JLBITS, and CSISR	○	○	●	○	○	253
VT55 FORTRAN-Callable Functions	○	○	●	○	○	732
XLISP: An Experimental Object-Oriented Language	○	○	●	●	○	944
Language processors						
Aide-De-Camp™ Software Engineering Environment	○	○	○	○	○	258
BASE/OE (Base Operating Environment)	●	○	●	○	○	800
CTS-300	○	○	○	○	○	1117
DSM-11	○	○	○	○	○	1118
IMPRS	○	●	○	○	○	816
M (MUMPS)	○	○	○	○	○	1123
M/11+	○	○	○	○	○	1123
Micro/RSTS	○	●	○	○	○	1124
polyFORTH II	○	○	●	○	○	1132
RSTS/E	○	○	●	○	○	1137
SHAREplus	○	○	○	●	○	1148
SISINF	○	●	●	○	○	339
XENIX® Operating System	○	○	○	○	○	1157
Law						
FCI Police System	○	●	○	○	○	657
INMAGIC	○	○	●	○	○	817
Title System	○	○	○	●	○	666
Vote-R (Voter Registration Package)	○	○	○	○	○	667
Voter Registration System	○	○	○	●	○	669
Library science						
CAIRS (Computer-Assisted Information Retrieval Systems)	○	○	●	○	○	801
CAIRS Government Document Librarian	●	●	○	○	○	654
CAIRS Medical Librarian	●	○	○	○	○	739
INMAGIC	○	○	○	○	○	817
LEADS (Local Education Agency Data System)	○	○	○	○	○	448
List processing						
Abax Mailing Label System	○	○	○	●	○	1077
ALP (Address List Processor)	○	○	○	○	○	1078
ARCHON: ADMS (Association Data Management System)	○	○	○	○	○	797
ARCHON: FUND-AL	○	○	○	○	○	797
Arts	○	○	○	○	○	162
Buddy's Membership Dog Club Module	○	○	○	●	○	39
Campaign Finance Program	○	○	○	○	○	654
Circulation Management	○	○	○	○	○	1065
CLASS — Education Alumni/Development System	○	○	○	○	○	437
CMS-11 (Circulation Management System)	○	○	○	○	○	1066
DFRS (Donor Fund Raising System)	○	○	○	○	○	808
Fundraiser	○	○	○	○	○	814
FUTURETECH — Mail Order Processing System	○	○	○	○	○	1235
IIAAS (Independent Insurance Agency Accounting System)	○	○	○	○	○	847
Impact	○	○	○	○	○	1235
IND/DEV-11 (Industrial Development Management System)	○	○	○	○	○	1090
LABELS: The Mailing List System	○	○	○	○	○	1091
Mail List/RSX	○	○	○	○	○	1094
MAILER: Mailing List System	○	○	○	○	○	1095
Membership	○	○	○	○	○	967
MJA™ Accounts Receivable for the PRO 350	○	○	○	○	○	98
MP System	○	○	○	○	○	829

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
NFC Mailing Module	○	●	●	○		1096
Order Processing for Mailing List Rental	○	○	○	○		1238
PER-FORM™ (Personalized Form Letters)	○	○	○	○		1098
Personnel Record System	○	●	○	○		1174
Plessey-WP (Plessey Word Processor)	○	●	●	○		1098
PRO-IV Medical Management	●	●	○	○		783
Property Management System	○	○	○	○		1199
PROS (Prospect, Letter, and Sales Facility)	○	●	○	○		1240
ProtoCall 1000™	●	○	○	○		834
RCMMAIL: Mail Merge	○	○	●	○		1104
Real Information	○	○	○	○		1200
REALISE Real Estate Office Automation System	○	○	○	○		1201
ROSTER	○	○	○	○		1105
RSTS Smart Mailer	○	●	○	○		1106
Sales Management and Mailing List	○	●	○	○		1242
Sales Prospect Data Base	○	●	○	○		1243
SATURN-WP™ Word Processing/List Processing	●	●	○	○		1394
SCRIPTORIUM II: Word/List Processing	○	●	●	○		1107
SEARCH/PURGE — Mailing List Deduplication Program	○	○	○	○		1243
SofGram Electronic Communications	○	○	○	○	●	1108
TELEPBAS (Address Manipulator)	○	○	○	○		841
Tenny Electronic Bulletin Board Message Mailing Facility	○	○	○	○		1351
Third-Party Claim Payment and Billing System	○	○	○	○		791
VEH-11 (Vehicle Registration)	○	●	○	○		667
Vote-R (Voter Registration Package)	○	●	○	○		667
Voter-11	○	●	○	○		668
Wabash College Student Information System	○	○	○	○		465
WORD-11	●	●	○	○		1403
XWORD	○	●	○	○		1111
Management						
A-to-Z Integrated System	○	○	●	○		1077
ADAM (Automated Dairy and Management)	○	○	●	○		150
CLASS (College-Level Administrative Software System)	○	●	○	○		440
Clientrac™	○	●	○	○		479
Contractor Management System	○	○	○	○		216
DAIRY-MAN Dairy Herd Management System	○	●	○	○		150
Due-Date Monitoring	○	○	○	○		64
GCIS (Group Corporate Information System)	●	○	○	○		815
General Ledger	○	○	○	○		634
H-BOMM	○	○	○	○	●	1005
Hospital Accounting and Management System	○	○	○	○		758
KRONIX-11™	○	○	○	○		947
KRONIX-PC™	○	○	○	○		948
Management Program 1000®	○	○	○	○		950
MAPS/DB	○	●	○	○		821
MYCRO/11 Process Management System	○	○	○	○		1024
PICS (Parts Inventory Control System)	○	○	○	○		1253
REALISE Real Estate Office Automation System	○	○	○	○		1201
Reporter	○	○	●	○		134
Manufacturing						
Accounting, Integrated	○	○	○	○	●	11
Apparel Master™	○	○	○	○		369
Athena Distributed Control System	○	○	○	○		549
BRG (Bearing Life Calculations)	○	○	○	○		471
C-11 Job Cost	●	●	○	○		44
CODE (Computer-Oriented Drafting Equivalent)	○	●	○	○		678
Cost Estimating	○	○	○	○	●	1232

1546 Keyword Cross-Reference Guide

	P/OS	RS/TS	RSX	RT-11	ULTRIX-11	Page
DECTap Tailored Application Programs: Wholesale System	o	o	o	o	o	373
DTRO BOMP (Bill of Materials Processor) System	o	o	●	o	o	377
DTRO Forecasting System	o	o	●	o	o	1233
DTRO Order Processing System	o	o	●	o	o	379
Export Package	o	o	o	o	o	382
Format International Feed Formulation Systems	o	o	o	o	o	153
Gear	o	●	●	o	o	688
GEARW	o	●	●	o	o	497
Holes	o	●	●	o	o	501
Hoop	o	●	●	o	o	501
ICLAYOUT	o	o	o	o	o	503
Inventory Control	o	o	o	o	o	388
IV-11 Inventory Control System	o	o	o	o	o	221
Job Costing	o	o	o	o	o	94
NMI Customer Profile Package	o	o	o	o	o	1237
Order Processing	o	o	o	o	o	396
Pioneer COMMAND Inventory Management Module	o	o	o	o	o	401
Pioneer COMMAND Purchase Order Processing Module	o	o	o	o	o	402
Pioneer COMMAND System for Financial Management, Distribution, and Manufacturing	o	o	●	o	o	831
ProBiz™ Purchasing Management	o	o	o	o	o	130
Purchase and Supply Control	o	o	o	o	o	406
Purchase Order Accounting	o	o	o	o	o	132
RS/1™	o	o	o	o	o	1224
Shaft: Stress Calculations	o	o	●	o	o	530
TAPEIA	o	o	●	o	o	540
Mapping						
A-to-Z Business Graphics	o	o	●	o	o	672
ABC/GRAF	o	o	●	o	o	672
Additions to the Roger Williams College Collection	o	o	o	o	o	673
BCP (Barcode/Block Character Plotter)	o	o	o	o	o	674
BSO/Mlink Microprocessor Program Linker	o	o	●	o	o	264
CHART: Bar Charts	o	o	●	o	o	678
Civil Library	o	o	●	o	o	478
CMODEL — Finite Element Model Builder	o	o	o	o	o	480
CODE (Computer-Oriented Drafting Equivalent)	o	o	●	o	o	678
COGO (Coordinate Geometry)	o	o	●	o	o	481
CON: A Program to Make a File Contiguous on a Files-11 Disk	o	o	o	o	o	563
Corgraph	o	o	o	o	o	679
CPLOT — Graphics Plotter Program	o	o	o	o	o	484
CPOST — Postplotter for Finite Element Output	o	o	o	o	o	485
DATS	o	o	o	o	o	680
DDT22: Virtual Debugger and Systems Package	o	o	o	o	o	273
DIGLIB	o	o	o	o	o	681
DRWLIB	o	o	o	o	o	683
ERDAS Image Processing and Geographic Information System	o	o	o	o	o	423
European MINC Package #4 — Plotters	o	o	o	o	o	685
European MINC Package #7 — Instruments	o	o	o	o	o	493
EVOKE	o	o	o	o	o	753
Fast Fourier Transform and Two Applications	o	o	o	o	o	237
FORTTRAN/RT-11 Plotting System for the IEEE-488 HP-9872S Plotter	o	o	o	o	o	687
GENPLT	o	o	o	o	o	689
GINO	o	o	●	o	o	691
GRASP: Graphics Applications Processor	o	o	o	o	o	694
Grid	o	o	●	o	o	498
GROUSE Ground Modeling System	o	o	o	o	o	498

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
HCGS	○	●	●	○	○	694
HIDE (Hidden Line Removal/Plotting Subprogram)	○	○	○	○	○	695
HP-7225A HP-GL Pen Plotter Library	○	○	○	○	○	696
HP-9872 Plotting Package for Use with MINCs	○	○	○	○	○	696
HPLOT.BAS: Hewlett-Packard 7202A Graphics Plotter Programs	○	●	○	○	○	696
HP.SYS: Hewlett-Packard 7470A Plotter Handler	○	○	○	○	○	1308
IP11 Industrial I/O Subsystem Software Driver	○	○	○	○	○	1316
Linwood (Linear Least-Squares Curve-Fitting Program)	○	○	○	○	○	508
LXY-11 Plotting Package	○	●	○	○	○	699
MAPSS = MAGIC (Management and Analysis of Geographic Characteristics Information)	○	○	○	○	○	700
MGSP (Multiware Graphics Subroutine Package)	○	○	●	○	○	701
MINC BASIC and RT FORTRAN Support for the HILOT DMP4 Plotter	○	○	○	○	○	704
MINC BASIC/FORTRAN Support for HIPAD Digitizers	○	○	○	○	○	704
MINC/BASIC-FORTRAN IV Support for the Tektronix 4662 Plotter ..	○	○	○	○	○	704
MINC/BASIC, MINC/FORTRAN Support for HILOT Plotter	○	○	○	○	○	705
MINC/BASIC, MINC/FORTRAN Support for the DP101 Plotter	○	○	○	○	○	705
MUMPS-11 Library Tape	○	○	○	○	○	321
On-Line Symbolic Region Access Utility for RSX-11/IAS	○	○	○	○	○	1129
Pie	○	●	●	○	○	707
PLANS: A Program to Plot Hard Copy on the Versatec Printer	○	○	○	○	○	246
PL.MAC: A Write-Only Device Handler for the IEEE-488 Interface 11-482	○	○	○	○	○	1332
PLOT	○	○	○	○	○	708
PLOT-11/RSTS and PLOT-11M for RSX	○	○	○	○	○	709
PLOT-11/RT	○	○	○	○	○	709
PLOT: Digital Incremental Plotter Software Package	○	○	○	○	○	710
PLOT3D: 3-D FORTRAN Plotting Package for MINC-11/VT105/HP-9872A	○	○	○	○	○	711
PLOT50 (Vector Plotting for the LA50)	○	○	○	○	○	711
PLOT.PR.BAS: GIGI/DECwriter IV	○	○	○	○	○	713
Plotting Package for RT-11 FORTRAN	○	○	○	○	○	713
PLOTXY.BAS: GIGI/Houston Instruments DMP29R X-Y Plotter Graphics Utilities	○	○	○	○	○	713
PLXY-11M	○	○	○	○	○	714
PLXY-11M-PLUS and PLXY-11/RSTS	○	○	○	○	○	714
PLXY-11/RT	○	○	○	○	○	715
PORTACALC XL: Floppy Version	○	○	○	○	○	832
PRO/SIGHT	○	○	○	○	○	716
RGL/11	○	○	○	○	○	719
Roger Williams College Collection	○	○	○	○	○	719
RSX-11D Software Collection	○	○	○	○	○	1139
RT-11/FORTRAN Support for Data Acquisition and Display on a VT105	○	○	○	○	○	250
SATURN-GRAPH™	○	○	○	○	○	723
SCPLT: CRT Screen Plot Program	○	○	○	○	○	724
Simple Line and Bar Graph Program	○	○	○	○	○	725
SPON (Spontaneous Activity of Neuronal Spikes)	○	○	○	○	○	1226
STRINGS (Storage and Retrieval Information Graphics)	○	○	○	○	○	728
SURFAC	○	○	○	○	○	728
SURVEY: Data Reduction and Plotting for Surveyor's Field Data	○	○	○	○	○	539
TERM.FOR: Smart Terminal Program for MINC	○	○	○	○	○	1352
VANGO	○	○	○	○	○	544
VT105 Graphics Package	○	○	○	○	○	731
VT125 Graphics Hard Copy on an EPSON MX-80 Serial Printer	○	○	○	○	○	731
VT55 FORTRAN-Callable Functions	○	○	○	○	○	732

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Materials handling						
AIM (Automatic Inventory Management)	○	○	●	○	○	368
Automotive Release Accounting	○	○	○	●	○	986
BOMP (Bill of Material Processor), MCBA, Inc.	○	●	●	○	○	989
C-11 Materials Management	●	●	●	○	○	989
C-CALC	○	●	●	○	○	621
CMMS (Comprehensive Maintenance Management System)	○	●	●	●	○	550
Concept Works Order Control — Materials	○	●	○	○	○	997
ConTrol — Materials Management Information System	○	○	○	○	○	748
DNC-11 (Direct Numerical Control Package)	○	○	●	○	○	1000
DPM (Dyeing Process Management)	○	○	●	○	○	1002
FEP2: A Finite Element Program for 2- and Axisymmetric 3-Dimensional Continua	○	○	●	●	○	1212
Format International Feed Formulation Systems	●	○	●	○	○	153
Freight Forwarder System	○	●	○	○	○	383
HOST-AGV (Host-Automated Guided Vehicles)	○	○	○	●	○	1010
INVENT: Inventory for Manufacturing Companies	○	○	●	○	○	1013
Inventory	○	○	○	●	○	386
Inventory Control	○	○	○	○	○	1014
MMS (Materials Management System)	○	○	○	○	○	1022
MMS-R Radio-Dispatched Material Management System	○	○	○	●	○	1023
MRP (Material Requirements Planning), MCBA, Inc.	○	○	●	○	○	1024
PACKET: Bill of Materials for Manufacturing	○	○	○	○	○	1030
PENQUIN™	○	○	○	○	●	399
PICS (Parts Inventory Control System)	○	○	○	●	○	1253
Pioneer COMMAND Material Requirements Planning Module	○	○	○	○	○	1034
Process Supervisory Control	○	○	○	●	○	426
QMS PROGRAMS® Computer Software/Finished Goods Release	○	○	○	●	○	1043
QMS PROGRAMS® Computer Software/Logistics	○	○	○	○	○	1044
Real-Aid	○	○	○	○	○	1049
SMARTEYE Routing Controller	○	○	○	○	○	408
TMS/2000 Tool Management System	○	○	○	○	○	1059
Wood Beam Check	○	○	○	○	○	546
Zip-Man™	○	○	○	○	○	419
Zip-Stock™	○	○	○	○	○	420
Mathematics						
ABACUS	○	○	○	○	●	430
ALGEB: A Language for Algebra and Number Theory	○	○	○	○	●	856
APL-11	○	○	○	○	○	857
APL-11 for RSTS/E	○	○	○	○	○	857
APL-11 for RT-11	○	○	○	○	○	858
Cephes Math Function Library	○	○	○	○	○	476
COGO (Coordinate Geometry)	○	○	○	○	○	481
COSAP	○	○	○	○	○	441
COSAP™ (Conversationally Oriented Statistical Analysis Package) ...	○	○	○	○	○	484
CVLLIB: General-Purpose Library for RT-MACRO and FORTRAN for the Professional	○	○	○	○	○	271
CVLLIB: General-Purpose RT-11 Library	○	○	○	○	○	272
DDT22: Virtual Debugger and Systems Package	○	○	○	○	○	273
DFWFT (Discrete Fast Walsh-Fourier Transform) Subroutine	○	○	○	○	○	236
DIBOL String-Interpreting Subroutines	○	○	○	○	○	877
Elliptic Integrals and Functions	○	○	○	○	○	1211
EXP1234 (Exponential Model Fitter)	○	○	○	○	○	494
FEP2: A Finite Element Program for 2- and Axisymmetric 3-Dimensional Continua	○	○	○	○	○	1212
FITPACK Curve and Surface Fitting Package	○	○	○	○	○	1212
FLIP: A Computer Program for Fuzzy Reasoning	○	○	○	○	○	168

	PDS	RST	RSX	RT-11	ULTRIX-11	Page
Floating-Point and Math Package LSI-FPP	o	o	●	o	o	282
FORSIM	o	o	o	o	o	495
FORTH: Programming System	o	o	o	●	o	1213
FPAC/DPAC Floating-Point Library	o	o	o	o	o	285
GLIM-3	o	●	●	●	o	1215
IMSL Library	o	●	●	●	o	506
IS-LEM Word Processing System	o	o	o	o	o	1382
LazerCalc	o	o	●	●	o	240
MathStat Library	o	●	●	●	o	297
Matrix Routines	o	o	o	●	o	297
Matrix Subroutines	o	o	o	o	o	298
MCSIM (Monte Carlo Simulation)	o	o	●	●	o	511
MICRO LP	●	o	o	o	o	1020
MINI LP	o	o	o	o	o	1022
MINIMOVIE.BYU	o	o	●	o	o	511
Minimumtour: Minimum Path Routines	o	o	o	●	o	512
Minitab® Data Analysis Software	●	●	●	●	o	1218
Mixed-Radix Fourier Transform Program	o	o	o	o	o	242
MLP (Maximum Likelihood Program)	o	o	o	●	o	1219
MOLDYN (A Molecular Dynamics Package)	o	o	o	o	o	242
MU BASIC-11/RT-11	o	o	o	●	o	913
NAG FORTRAN Library Service	o	o	●	●	o	1219
NONLIN (Nonlinear Least-Squares Curve-Fitting Program)	o	o	o	o	o	514
PLOT: Digital Incremental Plotter Software Package	o	o	o	●	o	710
Plotting Package for RT-11 FORTRAN	o	o	o	●	o	713
POLFIT (A General Polynomial Fitting Program)	o	o	●	●	o	247
Project Delta, Sections E and F: Additional Mathematics and Teacher Assistance	o	●	o	o	o	520
Q-MATH	o	o	o	o	●	1102
QUADPACK	o	o	o	o	●	1223
Random-Number Generator	o	o	●	●	o	132
Riverdale Math Package	o	●	o	o	o	455
RKLIN (Linear System Simulation: Runge-Kutta)	o	o	●	●	o	526
School Instructional Packages	o	●	o	o	o	459
Shaft: Stress Calculations	o	●	●	●	o	530
Single-Precision Floating-Point Program for LSI-11 Without EIS and FIS Options	o	o	o	●	o	252
SPON (Spontaneous Activity of Neuronal Spikes)	o	o	o	●	o	1226
Square Root Routine for Integers	o	●	●	●	o	534
SSP-11 (Scientific Subroutine Package)	o	o	●	●	o	535
STI-MATVAM	o	o	●	o	o	536
SVD (Singular-Value Decomposition)	o	o	●	●	o	540
TTEST	o	o	o	●	o	541
Utility Routines for a PDP-11/45 with a Floating-Point Processor	o	●	●	●	o	543
Variable-Metric Routine for Function Minimization	o	o	o	o	o	545
VT, BD, BD011, and IOS	o	o	●	o	o	730
Mechanical engineering						
BRG (Bearing Life Calculations)	o	●	●	●	o	471
CADBIRD II	o	o	o	o	o	474
CAPS — Section Properties Program	o	o	●	o	o	475
DAREP (Differential Analyzer Replacement — Portable), DARE/11	o	o	●	●	o	487
Gear	o	●	●	●	o	688
GEARW	o	●	●	●	o	497
GINTRAN (Graphics Input and Transformation)	o	o	●	●	o	691
Holes	o	●	●	●	o	501
Hoop	o	●	●	●	o	501
Machinery Monitoring Software System	o	o	●	o	o	1017

1550 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
MAESTRO	○	○	●	○	○	1018
PALETTE™: Computer-Aided Drafting and Design	●	○	○	○	○	705
SDRC® FATIGUE™	○	○	○	○	○	529
SDRC® MODAL-PLUS™	○	○	●	○	○	529
SDRC® SABBA™	○	○	○	○	○	530
Shaft: Stress Calculations	○	●	○	○	○	530
STI-MATVAM	○	○	○	○	○	536
Structural Member Analysis Programs	○	○	○	○	○	538
TAPEIA	○	●	○	○	○	540
VAMP (Vibration Analysis and Measurement Processor)	○	○	●	○	○	544
Media						
AAAMIS (Advertising Agency's Accounting and Management Information System)	○	○	○	○	●	1230
CAIRS Special Librarian	●	○	○	○	○	954
EPS (Electronic Publishing System)	○	○	○	○	○	811
/usr/tools	○	○	○	○	●	1401
Medical						
AISCorp. Medical Management Systems	○	●	○	○	○	734
Anatomic Pathology	○	○	○	○	○	734
Basic Image-Processing System for CAT Scans	○	○	○	○	●	737
Billing and Accounts Receivable System	○	○	○	○	○	737
C-Chart System — Medical Accounting, Inventory	○	●	○	○	○	738
CAMS (Computerized Arrhythmia Monitoring System)	○	○	○	○	○	740
CARE/DM	○	●	○	○	○	741
Checker	○	●	○	○	○	742
CLIN-TEAMS®	○	○	○	○	○	1210
CLIN-TEAMS® /Remote	○	○	○	○	○	743
Clini-CAL® Laboratory Information System	○	○	○	○	○	743
Clinical Data System Application Package and West Midlands RHA Blood Bank System	○	○	○	○	○	744
CO-LAB	○	○	○	○	○	745
Collaborative Clinic System	○	○	○	○	○	746
COMPCARE (Comprehensive Care Centers)	○	●	○	○	○	746
Comprehensive Blood Bank System	○	○	○	○	○	746
COMPU-CHART — Medical Records Program for Long-Term-Care Facilities	○	●	○	○	○	747
COMPU-TRIEVE — Report Writer and Data Manager	○	●	○	○	○	747
ConTrol — Materials Management Information System	○	○	○	○	○	748
D16 and ROTA Programs for GAMMA-11	○	○	○	○	○	749
DataCare	○	●	○	○	○	749
DMIS (Doctors' Medical Information System)	○	○	○	○	○	751
Doctor Billing	○	○	○	○	○	751
DOSRES (Quantal Dose-Response Analysis)	○	○	○	○	○	752
Episodic Billing System	○	○	○	○	○	752
EQUUS-11	○	○	○	○	○	151
European MINC Package #2 — Lab Management	○	○	○	○	○	753
EVOKE	○	○	○	○	○	753
FEED-MAN Ration Preparation	○	○	○	○	○	152
FISH: Post- and Interspike Interval Analysis	○	○	○	○	○	1212
GAB (General Program for the Analysis of Biopotentials)	○	○	○	○	○	1214
Group Health and Life Insurance	○	○	○	○	○	846
Group Purchasing System	○	○	○	○	○	754
HBS Nursing Home Management Information System	○	○	○	○	○	755
HIS (Hospital Information System)	○	○	○	○	○	757
Home Health Management	○	○	○	○	○	757
HomeRange	○	○	○	○	○	154
Hospital Laboratory System	○	○	○	○	○	758

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
HTP (Hemodynamic Tracking Profile)	○	○	○	●	○	759
ILS (Interactive Laboratory System)™	○	○	●	●	○	505
Independent Laboratory System	○	○	○	○	○	759
intRlab	○	○	○	○	○	761
JSI/MIS (John Snow, Inc./Medical Information System)	○	○	○	○	●	762
Laboratory Data Management System	○	○	○	○	○	763
LABPlus (Laboratory Information System)	○	○	●	○	○	764
Leadership Series™ Hospital Information System	○	○	○	○	○	765
LT/CARE — Accounts Receivable for Long-Term-Care Facilities	○	●	○	○	○	766
MDS (Medical Data System)	○	●	○	○	○	767
MDX	○	○	○	○	○	767
Medical Laboratory System	○	●	○	○	○	768
Medical Office Manager	○	●	○	○	○	768
Medical Records System	○	○	○	○	○	769
Medication/Treatment Sheet System for Nursing Homes	○	○	○	●	○	770
MediCom®	○	○	○	○	●	770
MEDICOMS (Medical Office Receivables Management System)	○	●	○	○	○	770
MEDISYS	○	○	●	○	○	771
MPMS (Medical Practice Management System)	○	○	○	○	○	773
MRS (Medical Records System)	○	●	○	○	○	774
Multilab — Comprehensive Clinical Laboratory Information System ..	○	○	○	○	○	774
Multipharm	○	○	○	○	○	775
Nal Data Reduction	○	○	○	●	○	1220
Paramedics Billing	○	●	○	○	○	776
PAS-11/D (Professional Accounting Series-11/Dental)	○	●	○	○	○	777
PAS-11/M (Professional Accounting Series-11/Medical)	○	○	○	●	○	777
Pathology Billing	○	●	○	○	○	778
Patient Management System	○	○	○	○	○	779
Pharmacy	○	○	○	○	○	780
Practice Management System	○	○	●	○	○	782
Practice Management System	○	●	○	○	○	782
PRO-IV Medical Management	●	●	●	○	○	783
Programs for Analyzing Stress-Strain Data from Lung Parenchyma and Artery Tests	○	○	○	●	○	784
Radiology Accounts Receivable Management System	○	○	○	○	○	785
Radiology Billing	○	●	○	○	○	785
RBS (Radiology Billing System)	○	○	○	○	○	786
RIM (Relationship Impact Model)	○	○	○	○	○	1254
RUNREF	○	○	○	○	○	1392
RXS (Pharmacy System)	○	●	○	○	○	787
SALGLA (Salivary Gland Analysis)	○	○	○	○	○	788
SLEEP: Programs of Analysis of Sleep-Wakefulness Data	○	●	○	○	○	788
SPON (Spontaneous Activity of Neuronal Spikes)	○	○	○	○	○	1226
Sunquest Laboratory System	○	○	○	○	○	790
TEAMS®-TOX	○	○	○	○	○	1226
TMR® (The Medical Record)	○	○	●	○	○	791
VET-11	○	○	○	○	○	792
Vet System/2000	○	○	○	○	○	792
VSV-01 Device Driver for RSX-11M	○	○	○	○	○	793
Wayne Medical System	○	○	○	○	○	793
Mental health						
CMIS (Mental Health Management Information System)	○	○	○	○	○	745
RIM (Relationship Impact Model)	○	○	○	○	○	1254
Menu handlers						
A-to-Z Integrated System	○	○	○	○	○	1077
A-to-Z Integration Kit	○	○	○	○	○	256
ASCII Driven Menu for RSTS/E	○	○	○	○	○	260

1552 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
BBASE: A Small Data Base Program	●	○	●	○	○	801
CADA-1983 (Computer-Assisted Data Analysis Monitor)	○	○	●	○	○	433
CT*OS/IT*OS Word Processing	○	●	●	●	○	1083
DBSMNG: Small Data Base Management Package Binary Kit	○	○	○	○	○	565
DCW Menu for RSTS/E Systems	○	○	○	○	○	272
DECtap Manufacturing System	○	○	○	○	○	1000
E Z Chart	○	○	●	●	○	684
EQUINOX™	○	○	○	●	○	1003
Evets Accounting Systems	○	○	○	○	○	64
File Management Utility, Version 2.3	○	○	●	○	○	573
FMS-11/IAS	○	○	○	○	○	812
FMS-11/RSTS	○	○	●	○	○	813
FORMAT (Forms Management Transaction System), Version 5.1	○	○	○	○	○	283
FORMATIX	○	○	●	○	○	814
Leverage	○	○	○	○	○	821
LOCK	○	○	○	●	○	190
M/APS (Menu/Authorization Processor System)	○	○	○	○	○	296
MENU-11/RSTS	○	○	○	○	○	299
Menu Presentation Software	○	○	○	○	●	582
THE MENU SYSTEM	○	○	○	○	●	300
MENU/E	○	○	○	○	●	300
Micro/RSX FMS-11 (Forms Management System)	○	○	○	○	○	824
MPS (Menu Presentation Software)	○	○	○	○	●	1162
P/OS Diskette, Hard Disk, and Hard Disk (Arabic)	●	○	○	○	○	1132
PRO-2780/3780 Communications Applications	○	○	○	○	○	1333
PRO/SIGHT	○	○	○	○	○	716
PRO/Tool Kit FORTRAN-77	○	○	○	○	○	927
Q-MENU	○	○	○	○	●	1102
SPECS: A Menu-Control System for RT-11	○	○	○	○	○	345
TIP (Terminal Interface Program)	○	○	○	○	○	1400
TRAMP for RSX-11 and RT-11	○	○	○	○	○	353
VISUAL/menu	○	○	○	○	●	359
Metals						
AUTO-BOP	○	○	○	○	○	985
AUTO-MET and Q-VAR	○	○	○	○	○	986
Automated Powder Diffraction Data Collection and Analysis	○	○	○	○	○	1208
Casting Costing, Pricing, and Profit Analysis	○	○	○	○	○	962
GEARW	○	○	○	○	○	497
MBP (Metal Building Program)	○	○	○	○	○	510
Milltech: Melt Management System	○	○	○	○	○	1021
MMS (Materials Management System)	○	○	○	○	○	1022
TMS/2000 Tool Management System	○	○	○	○	○	1059
Microprocessor development						
8008.BAS and 8080.BAS	○	○	○	○	○	854
80/DS (PL/M-80) (Development System)	○	○	○	○	○	854
86/PC (PL/M-86) Compiler	○	○	○	○	○	854
Advanced Development Tool Kit	○	○	○	○	○	258
ASEA's DS-8/QDBC-11 Device Driver	○	○	○	○	○	180
ASM65 — Cross-Assembler for the 6502 Microprocessor	○	○	○	○	○	260
BSO/Assembler Microprocessor Relocating Assemblers	○	○	○	○	○	262
BSO/C Compiler	○	○	○	○	○	262
BSO/Debug Microprocessor Symbolic Debuggers	○	○	○	○	○	263
BSO/Fmtcnv (Format Conversion Program)	○	○	○	○	○	230
BSO/Mlib Microprocessor Program Librarian	○	○	○	○	○	263
BSO/Mlink Microprocessor Program Linker	○	○	○	○	○	264
BSO/Objcnv Format Conversion Program	○	○	○	○	○	230
BSO/Pascal Compiler	○	○	○	○	○	264

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
BSO/PLM Compiler	o	o	●	o	o	265
BSO/Teklid Tektronix Emulator Loading Program	o	●	●	●	o	1270
C Language System, Second Master Release	o	●	●	o	o	867
C68	o	o	o	o	●	869
CAMIC (Computer-Aided Microprocessing)	o	o	o	o	●	266
Cardware Disk Subsystem	o	●	●	o	o	1161
CDL2 Compiler	o	●	o	o	o	870
CLUE™ (C (Source Level) Linecount Utility)	o	o	o	o	o	268
CRAFT (Copperweld Robotics ASCII Format Translator)	o	o	●	●	o	564
Cross-Assemblers	o	o	o	o	o	270
DEBUG/RT (Debugger)	o	o	o	o	●	274
Des BASIC (BASIC Cross-Compiler)	o	o	o	o	●	875
Des C (C Cross-Compiler)	o	o	o	o	●	876
Des Pascal (Pascal Cross-Compiler)	o	o	o	o	●	876
epsitool:assemble	o	o	●	o	o	278
FALCON Application for RT-11	o	o	o	o	o	572
KMC11 Tools	o	o	●	o	o	289
LSI-11 Microprogramming Tools, Version 1.0	o	o	o	o	o	292
M-CUBED — Multiple Microprocessor MACRO Cross-Assembler	o	o	o	o	o	293
M6800/01/05/09 Cross-Software Packages	o	●	●	o	o	293
MACDBG-RT	o	o	o	o	o	294
MACRO-05 MC6805 Cross-Development Tools	o	o	●	●	o	895
MACRO-09 MC6809 Cross-Development Tools	o	o	o	o	●	895
MACRO-65 6502 Cross-Development Tools	o	o	o	●	●	896
MACRO-68 MC68000/10 Cross-Development Tools	o	o	o	●	●	897
MACRO-80 8080/8085 Cross-Development Tools	o	o	o	o	●	897
MACRO-86 8086/8088 Cross-Development Tools	o	o	o	●	●	898
MACRO-8K Z-8000/1/2/3/4 Cross-Development Tools	o	o	o	●	●	898
MACRO-MC MC6800/01/02/03/08 Cross-Development Tools	o	o	o	o	●	899
MACRO-Z8 Z-80 Cross-Development Tools	o	o	o	●	●	901
MACSYS-RT (MACRO-11 Development System Software)	o	o	o	o	o	296
Micro Concurrent Pascal (mCP) Cross-Compiler	o	o	o	o	o	904
MICRO.BAS: 8080-Based Microcomputer Simulator	o	o	o	o	o	301
Microbench 6800 Cross-Assembly Package	o	●	●	o	o	301
Microbench 68000 Cross-Assembly Package	o	●	●	o	o	302
Microbench 6805 Cross-Assembly Package	o	o	●	●	o	303
Microbench 6809 Cross-Assembly Package	o	o	●	●	o	304
Microbench 8021/8035/8048/8748 Cross-Assembly Package	o	o	●	●	o	305
Microbench 8051 Cross-Assembly Package	o	o	●	●	o	306
Microbench 8080/8085 Cross-Assembly Package	o	o	●	●	o	307
Microbench 8086/8087/8088 Cross-Assembly Package	o	o	●	●	o	308
Microbench Pascal Cross-Compiler for the Intel 8086/8088	o	o	●	●	o	311
Microbench Simulators for the Zilog Z80, Intel 8080, and Intel 8086	o	●	●	●	o	312
Microbench Z80 Cross-Assembly Package	o	o	●	●	o	313
Microbench Z8000 Cross-Assembly Package	o	o	●	●	o	314
microMAGIC Microprocessor Software Development Package	o	o	o	o	o	905
MicroPower/Pascal-Micro/RSX	o	o	o	o	o	315
MicroPower/Pascal-RSX	o	o	o	o	o	315
MicroPower/Pascal-RT	o	o	o	●	o	316
Micro/RSTS	o	o	●	o	o	1124
Micro/RSTS COBOL-81	o	o	o	o	o	906
Micro/RSTS FORTRAN-77	o	o	●	o	o	907
Micro/RSTS FORTRAN-77 DEBUG	o	o	o	o	o	317
Micro/RSX	o	o	o	o	o	1125
Micro/RSX COBOL-81	o	o	o	o	o	908
Micro/RSX DIBOL	o	o	o	o	o	909
Micro/RSX FORTRAN-77	o	o	o	o	o	909
Micro/RSX FORTRAN-77 DEBUG	o	o	o	o	o	318

1554 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Micro/RSX PDP-11 Pascal	○	○	●	○	○	910
Modula-2/RSX	○	○	●	○	○	911
Motorola 68000/10 Cross- and Resident Assembler	○	○	○	○	○	320
MPS Cross-Assembly Programs for RT-11	○	○	○	●	○	912
MTK-II Multi-Tasking Kernel	○	○	○	●	○	320
OBJCON (General-Purpose Object Module Conversion Utility)	○	●	●	○	○	244
Objective-C	○	○	○	○	●	913
PROM Programming Software	○	○	○	●	○	248
RSX MDE/T-11 (Microcomputer Development Environment)	○	○	○	○	○	333
RT-11 MDE/T-11 (Microcomputer Development Environment)	○	○	○	○	○	334
S-TRAN™ BASIC to C Translator	○	○	○	○	○	335
SATT: Real-Time Operating System	○	○	○	○	○	1147
SNDRCV (Send/Receive File Utility)	○	○	○	○	○	339
SUPERDBG	○	●	●	●	○	346
SUPERMAX	○	○	●	○	○	941
Tektronix 8001/8002/8550 Communication Package	○	○	●	○	○	1350
TNIX Operating System — Tektronix 856x Series	○	○	○	○	○	1151
UMDL (Universal Microprocessor Development Laboratory)	○	○	○	○	○	355
Vandata Z80 C Cross-Compiler	○	○	●	○	○	942
X-TOOLS	○	○	○	○	○	361
Modeling/simulation						
3277 Display Emulator for RSTS/E	○	●	○	○	○	1260
3780 COMBOARD™	○	○	●	○	○	1260
ABC/Analyst	○	○	○	○	○	612
APL-11	○	○	○	○	○	857
BARON: Principal, Payment, Amortization, and Interest Information	○	○	○	○	○	618
BDARE: Dynamic-System Simulation in BASIC	○	○	●	○	○	469
C303	○	○	○	○	○	474
CALOUT/CONTRL	○	○	○	○	○	1272
CAMPUS (Campus Planning Package)	○	○	○	○	○	434
Caswell Model (Apprehend)	○	○	○	○	○	1418
Cobra	○	○	○	○	○	214
CSM/O/P (Continuous System Modeling and Optimizing Program)	○	○	○	○	○	486
DAREP (Differential Analyzer Replacement — Portable), DARE/11	○	○	○	○	○	487
Data*Model Spreadsheet Management System	○	○	○	○	○	625
DataCalc	○	○	○	○	○	625
DEBUG/RT (Debugger)	○	○	○	○	○	274
DECtalk Application Support Library	○	○	○	○	○	274
Demonstrator	○	○	○	○	○	808
DESTOP (Direct Executing Scientific Computation and Operating Package)	○	○	○	○	○	488
DESIRE (Direct-Executing Simulation in Real Time)	○	○	○	○	○	489
Digital Clock	○	○	○	○	○	185
Documentor/F	○	○	○	○	○	1373
DYNAMO	○	○	○	○	○	879
ELAN-AC	○	○	○	○	○	491
ELAN-MOD (Transistor and Diode Modeling Program)	○	○	○	○	○	492
ELAN-TR (Transient Radiation)	○	○	○	○	○	492
Engineering Science Program Exchange	○	○	○	○	○	443
EXP1234 (Exponential Model Fitter)	○	○	○	○	○	494
FEP2: A Finite Element Program for 2- and Axisymmetric 3-Dimensional Continua	○	○	○	○	○	1212
FINAL	○	○	○	○	○	629
FINAL (Financial Analysis)	○	○	○	○	○	629
FINAR (Financial Analysis and Reporting System)	○	○	○	○	○	630
FINESSE	○	○	○	○	○	630
FINPRO (Financial Projection Model)	○	○	○	○	○	631

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Flock Modeling and Egg Production Forecasting	o	•	•	•	o	153
Forms-Control Simulation for DECwriters and Teletypes	o	o	o	•	o	1379
FORSIM	o	o	o	o	o	495
GDL (Graphic Display Library)	o	o	•	•	o	688
GENSIM-IMPRS Financial Simulator	o	•	•	•	o	635
GLIM-3	o	•	•	•	o	1215
GSE-11	o	o	•	•	o	286
HC.MAC — A Handler that Converts a Second Terminal into a Line Printer	o	o	o	•	o	1380
HR&OD (Human Resource & Organization Development)	o	o	o	o	o	1170
I/CAP (Interactive Electronic Circuit Analysis Program)	o	o	•	•	o	503
I/LOGIC (Interactive Logic Simulation)	o	o	•	o	o	504
ILS/SKY	o	o	•	•	o	505
INVSIM (Inventory Simulation)	o	•	•	o	o	818
ISIS 80 Continuous System Simulation Program	o	o	•	•	o	288
ISL (Interactive Simulation Language)	o	o	•	•	o	507
IUC (Interactive Unit Commitment)	o	o	•	•	o	507
Key Conversational Planning System	o	o	•	•	o	964
LDAT (Logic Design Automation Terminal)	o	o	•	•	o	508
LP (Linear Programming)	o	•	•	•	o	1016
Management Case Studies	o	•	•	o	o	965
Marketing Strategy Simulation for Minicomputers	o	•	•	•	o	1236
MATCHUP: Assignment	o	•	•	•	o	1171
MICRO.BAS: 8080-Based Microcomputer Simulator	o	•	•	o	o	301
Microbench Simulators for the Zilog Z80, Intel 8080, and Intel 8086 ...	o	•	•	•	o	312
MICRODARE	o	•	•	•	o	1217
MINIMOVIE.BYU	o	o	•	•	o	511
MLP (Maximum Likelihood Program)	o	o	•	•	o	1219
MOSFIT (MOS Transistor Model Parameter Extraction Package)	o	o	•	•	o	512
MPS Cross-Assembly Programs for RT-11	o	o	•	•	o	912
NDTRAN2	o	•	•	o	o	513
Network	o	•	•	•	o	514
NORTON (Astronomical Ephemeris Program Package)	o	o	•	•	o	1221
OS/FT (File System)	o	o	•	•	•	585
OS/RT (Real Time O.S. Kernel)	o	o	o	o	o	1130
PLOT3D: 3-D FORTRAN Plotting Package for MINC-11/VT105/ HP-9872A	o	o	o	•	o	711
PSS/2P (Power System Simulator)	o	o	•	•	o	521
PSS/O-S (Power System Simulator for Operations)	o	o	•	•	o	522
QMS PROGRAMS® Computer Software/Optimum Inspection Strategies	o	o	•	•	o	1045
QMS PROGRAMS® Computer Software/What-If Studies	o	o	•	•	o	1047
RES	o	o	•	•	•	524
RISKAN1/RISKAN2 (Risk Analysis — General/Risk Analysis — Accounting)	o	•	•	•	o	971
RKLIN (Linear System Simulation: Runge-Kutta)	o	o	•	•	o	526
RSX-11M/IAS RJE/HASP	o	o	•	•	o	1344
RSX-11M/M-PLUS RJE/HASP	o	o	•	•	o	1344
RSX MDE/T-11 (Microcomputer Development Environment)	o	o	•	•	o	333
RT-11 MDE/T-11 (Microcomputer Development Environment)	o	o	o	•	o	334
RT/EMT (RT-11 Emulator)	o	o	•	•	o	1146
SDRC® MODAL-PLUS™	o	o	•	•	o	529
SDRC® SABBA™	o	o	o	•	o	530
SIMQU (Simulated Line Printer Queue)	o	•	•	•	o	201
SKYMNK Software Support	o	o	•	•	o	533
STRADIS	o	•	•	•	o	409
Supercomp-Twenty™	•	o	•	•	o	649
SVD (Singular-Value Decomposition)	o	o	•	•	o	540

1556 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Tektronix Emulator for RSX-11	○	○	●	○	○	729
TESS™ (The Extended Simulation System)	○	○	○	○	○	729
UCSMP: A General Dynamic Modeling and Simulation Program	○	○	○	○	○	541
WATER-MAN HNA (Hydraulic Network Analyzer)	○	●	○	○	○	157
ZPLAN PLUS	○	●	○	○	○	651
MRP						
CMI PROFIT	○	●	○	○	○	992
Concept Material Requirements Planning	○	○	○	○	○	996
DOVETAIL MRP (Materials Requirement Planner)	○	●	○	○	○	1001
FMRP (Full Material Requirements Planning)	○	○	○	○	○	1004
H-PLAN/M	○	○	○	○	○	1008
IMCS (Interactive Manufacturing Control Systems)	○	●	○	○	○	1011
Integrated Manufacturing and Financial System, Version 4.0	○	○	○	○	○	1012
MCS-3 (Manufacturing Control System)	○	○	○	○	○	1020
MIL-Concept Production Control System	○	○	○	○	○	1021
MRP (Material Requirements Planning), MCBA, Inc.	○	●	○	○	○	1024
PICAM	○	○	○	○	○	1032
Pioneer COMMAND Material Requirements Planning Module	○	○	○	○	○	1034
Networking						
3277 Display Emulator for RSTS/E	○	●	○	○	○	1260
ACCES Network File Management Service	○	○	○	○	●	558
ACCES Network Virtual Terminal Service	○	○	○	○	○	1261
ACCES NPP (Network Protocol Package)	○	○	○	○	○	1261
Access/BSC 3270	○	○	○	○	○	1262
Access/DIA	○	○	○	○	○	1263
Access/SNA 3270	○	○	○	○	○	1264
Access/SNA 3770	○	○	○	○	○	1264
Access/SNA 5250	○	○	○	○	○	1265
Access/SNA APPC	○	○	○	○	○	1265
AutoTELEX	○	○	○	○	○	1268
AVL	○	○	○	○	○	859
BFX (Bulk File Transfer)	○	○	○	○	○	1268
BLAST® (Blocked Asynchronous Transmission)	○	○	○	○	○	1269
BURCOM (DIGITAL/Burroughs Communication System)	○	○	○	○	○	1271
CALOUT	○	○	○	○	○	1272
CMR11/CMV11 Software Driver	○	○	○	○	○	1274
CMR21 Host Utility	○	○	○	○	○	993
ComLINK: Remote Communications Enhancement	○	○	○	○	○	1275
CTS-300 RDCP (2780/3780)	○	○	○	○	○	1279
DECmail-11	○	○	○	○	○	1084
DECnet-11M-PLUS: RSX-11M-PLUS Network Software	○	○	○	○	○	1281
DECnet-11M: RSX-11M Network Software	○	○	○	○	○	1282
DECnet-11S: RSX-11S Network Software	○	○	○	○	○	1283
DECnet-IAS	○	○	○	○	○	1284
DECnet-Micro/RSX	○	○	○	○	○	1284
DECnet Router Server	○	○	○	○	○	1285
DECnet-RT	○	○	○	○	○	1286
DECnet/E	○	○	○	○	○	1287
DECnet/SNA RSX 3270 Terminal Emulator	○	○	○	○	○	1287
DECnet/SNA RSX Application Interface	○	○	○	○	○	1288
DECnet/SNA RSX Remote Job Entry	○	○	○	○	○	1289
DID-X.25	○	○	○	○	○	1291
DMG/NET	○	○	○	○	○	1293
DN-11 Driver for RSTS/E Version 7.0	○	○	○	○	○	1294
Dreams	○	○	○	○	○	1086
DUPLEX — Serial Communication Between Computers	○	○	○	○	○	1298
DV11/3271 Driver for RSX-11M V3.0	○	○	○	○	○	1298

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Ethernet Terminal Server	○	○	●	○	○	1300
ETHERWAY™	○	○	●	○	○	1301
European MINC Package #6 — Communication	○	○	○	●	○	1301
EXOS 8031 (Excelan Open Architecture Systems)	○	○	○	●	○	1302
EXOS 8032 (Excelan Open Architecture Systems)	○	○	○	●	○	1303
FTP (TCP/IP File Transfer Program)	○	○	○	●	○	1304
FUSION™	○	○	○	○	●	1304
GOULD/DEC Data Link	○	○	○	○	○	1305
GPIB Software	○	○	○	○	○	286
HASP	○	○	○	○	○	1306
HASP + RSX-11M/RSX-11M-PLUS Interconnect Software	○	○	○	○	○	1307
HASP + RT-11 and TSX-PLUS Interconnect Software	○	○	○	○	○	1308
IBM 2780/3780	○	○	○	○	○	1310
IBM 3270	○	○	○	○	○	1310
IBM HASP	○	○	○	○	○	1310
IBM-SDLC/HDLC-UNC	○	○	○	○	○	1311
IF-11/HDLC-X.25 Link-Level Software	○	○	○	○	○	1314
IF-11/X.25 Packet-Switched Network Firmware	○	○	○	○	○	1315
IF-11/X.25 PLUS PAD Software and Firmware	○	○	○	○	○	1315
KMS11 RSX X.25 LAPB Link-Level Software	○	○	○	○	○	1319
KMV11-A HDLC Framing Software	○	○	○	○	○	1319
KMV11 RSX X.25 LAPB Link-Level Software	○	○	○	○	○	1320
LAD/11 (Local Area Devices) for RSX	○	○	○	○	○	579
LAT-11	○	○	○	○	○	1322
LSI-X.25 Front End Processor	○	○	○	○	○	1323
LSTERM: Virtual Terminal Program	○	○	○	○	○	1323
M-Net™ (Manufacturing Network)	○	○	○	○	○	1017
MAIL: Electronic Mail Package for RSTS/E	○	○	○	○	○	1093
Mail Package	○	○	○	○	○	1094
Mail/Message System	○	○	○	○	○	1095
MICRODARE	○	○	○	○	○	1217
Micro/RSX 2780/3780 Emulator	○	○	○	○	○	1324
Micro/RSX 3271 Protocol Emulator	○	○	○	○	○	1324
MODLNK	○	○	○	○	○	1326
MOSTE (Management of System Telephone Expenses)	○	○	○	○	○	1185
MUX200/RSX-1AS Multiterminal Emulator	○	○	○	○	○	1327
NCNET	○	○	○	○	○	1026
NETEX (Network Executive)	○	○	○	○	○	1328
Observer	○	○	○	○	○	1128
OS/NET (Local Area Networking)	○	○	○	○	○	1329
PCL-11M	○	○	○	○	○	1331
Phoenix-Pro™	○	○	○	○	○	968
PNMS III (Peregrine's Network Management System III)	○	○	○	○	○	193
poly-COM™	○	○	○	○	○	1332
PRO/Associate	○	○	○	○	○	1334
PRO/DECnet	○	○	○	○	○	1335
Professional Host Communications	○	○	○	○	○	1336
PRO/SNA Communications	○	○	○	○	○	1338
Q-NET — Interface to DECnet	○	○	○	○	○	1339
RSTS/E	○	○	○	○	○	1137
RSTS/E-2780	○	○	○	○	○	1340
RSTS/E High-Performance 2780/3780 Emulator	○	○	○	○	○	1341
RSX-11 2780/3780 Emulator	○	○	○	○	○	1341
RSX-11 PSI/M (Packetnet System Interface)	○	○	○	○	○	1342
RSX-11 PSI/M-PLUS (Packetnet System Interface)	○	○	○	○	○	1342
RSX-11/3271 Protocol Emulator	○	○	○	○	○	1343
RSX-11M/IAS RJE/HASP	○	○	○	○	○	1344
RSX-11M/SNA Protocol Emulator	○	○	○	○	○	1345

1558 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
RSX DLX-11	○	○	●	○	○	1345
RT-11 2780/3780 Protocol Emulator	○	○	○	●	○	1346
RT-11 Single-User Operating System	○	○	○	○	○	1143
Series IV System	○	○	●	○	○	938
SHAREplus	○	○	○	●	○	1148
SKYPORT	○	○	○	○	○	597
STAR-eleven	○	○	○	○	○	1150
TANGO	○	○	○	○	●	1349
TEM (Terminal Emulator for RSX-11)	○	○	●	○	○	1351
Tenny Electronic Bulletin Board Message Mailing Facility	○	○	○	●	○	1351
TNIX Operating System — Tektronix 856x Series	○	○	○	○	○	1151
TYCHO/HASP	○	●	○	○	○	1352
UN1004/RSX	○	○	●	○	○	1354
Uniq™ UNIX* System V	○	○	○	○	○	1154
UNIVAC NTR	○	○	○	●	○	1354
UNIVAC UTS400	○	○	○	○	○	1355
Virtual Disk	○	○	○	●	○	1356
VT (Virtual Terminal)	○	○	○	○	○	1358
VTERM III	○	○	○	○	●	1358
VTERM/4010	○	○	●	○	○	1360
X25-LAPB/HDLC-BAC	○	○	○	○	○	1361
X.Dot™	○	○	○	○	○	1361
XNS/ITP (Xerox Network Systems Internet Transport Protocols)	○	○	○	●	○	1362
YH for DH11/DHV11	○	○	○	○	○	1363
YL for DLV11J	○	○	○	○	○	1364
YZ for DZ11/DZV11	○	○	○	○	○	1364
Nuclear						
Basic Image-Processing System for CAT Scans	○	○	○	○	○	737
ELAN-TR (Transient Radiation)	○	○	○	○	○	492
Gamma Spectroscopy Applications Package	○	○	○	○	○	1214
NaI Data Reduction	○	○	○	○	○	1220
Neutron Activation Analysis	○	○	○	○	○	1220
QLIB (CAMAC Subroutine Library)	○	○	○	○	○	1222
RADIO-OSCAR	○	○	○	○	○	784
S220 CANSCAN	○	○	○	○	○	526
S235/S535 GAMMA-M	○	○	○	○	○	527
S240/S540 SPECTRAN-F	○	○	○	○	○	527
S245/S545 Quality Assurance Software	○	○	○	○	○	528
S531A/S631A ABACOS II	○	○	○	○	○	1224
S541/S641 APOGEE	○	○	○	○	○	528
S543 NAA	○	○	○	○	○	529
VSV-01 Device Driver for RSX-11M	○	○	○	○	○	793
Numerical analysis						
ABACUS	○	○	○	○	○	430
CHROM (Chromatography Graphics and Analysis)	○	○	○	○	○	1208
HCGS	○	○	○	○	○	694
Minitab® Data Analysis Software	○	○	○	○	○	1218
MLP (Maximum Likelihood Program)	○	○	○	○	○	1219
QUADPACK	○	○	○	○	○	1223
Numerical control						
APPS/2 (Automatic Part Programming System, Version 2)	○	○	○	○	○	984
C-DASS (Computer Distribution and Storage System)	○	○	○	○	○	990
CAM-TECH	○	○	○	○	○	990
CIMCO Interactive APT (Automated Program Tools)	○	○	○	○	○	991
DNC-11 (Direct Numerical Control Package)	○	○	○	○	○	1000
G-Post (Generalized Postprocessor)	○	○	○	○	○	1005

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
MAESTRO	○	○	●	○	○	1018
NC Tape Verification for Manufacturing Operations	○	○	●	●	○	1025
NCL — Interactive Graphics Software	○	○	●	○	○	1025
NCNET	○	○	●	●	○	1026
NCTAPE (Numerical Control Tape Processing System)	○	○	●	○	○	1027
NUFORM Level I	○	○	●	○	○	1028
NUFORM Level II	○	○	○	○	○	1028
OMNICONTR0L® and OMNIPREP®	○	○	○	○	○	1029
PEPS (Production Estimating and Planning System)	○	○	●	○	○	1031
UCC-APT (Automated Program Tools)	○	○	○	○	○	1060
UCC/CAM 100	●	○	○	○	○	1061
Nutrition						
Dietary Scheduling System	○	●	○	○	○	751
FEED-MAN Feed Analyzer	○	○	●	○	○	152
FEED-MAN Ration Preparation	○	○	○	○	○	152
Format International Feed Formulation Systems	●	○	●	○	○	153
MICRO FEED	●	○	○	○	○	155
TACT (Total Agribusiness Computer System)	○	●	○	○	○	157
Office systems						
A-to-Z Business Graphics	○	○	●	○	○	672
A-to-Z Compu-Share™ Accounting Family Accounts Payable	○	○	●	○	○	4
A-to-Z Compu-Share™ Accounting Family Accounts Receivable	○	○	○	○	○	4
A-to-Z Compu-Share™ Accounting Family General Ledger	○	○	○	○	○	5
A-to-Z Compu-Share™ Accounting Family Inventory Control	○	○	●	○	○	6
A-to-Z Compu-Share™ Accounting Family Order Entry	○	○	○	○	○	6
A-to-Z Data Inquiry	○	○	○	○	○	796
A-to-Z Document Transfer (DECdx)	○	○	●	○	○	1261
A-to-Z Integration Kit	○	○	○	○	○	256
A-to-Z Supercomp-Twenty™	○	○	○	○	○	611
A-to-Z Word Processing	○	○	○	○	○	1368
Access/BSC 3270	○	●	●	●	●	1262
Access/DIA	○	●	●	●	●	1263
Access/SNA 3270	○	●	●	●	●	1264
Access/SNA 3770	○	●	●	●	●	1264
Access/SNA 5250	○	●	●	●	●	1265
Access/SNA APPC	○	●	●	●	●	1265
Accounts Payable	○	○	○	○	○	18
AiM™ Payables	○	○	○	○	○	30
AiM™ Payroll — Interactive	○	○	○	○	○	31
CAIRS (Computer-Assisted Information Retrieval Systems)	○	●	○	○	○	801
Cardware Disk Subsystem	○	○	●	○	○	1161
CSI General Ledger	○	○	○	○	○	56
Due-Date Monitoring	○	○	○	●	○	64
FLEET™	○	○	○	○	○	1420
IGOR Document Preparation System	○	○	○	●	●	1381
IIAAS (Independent Insurance Agency Accounting System)	○	○	●	●	○	847
INFOTEX	○	○	○	○	○	1381
MENU-11/RSTS	○	○	○	○	○	299
PARS: Professional Time, Billing A/R	○	○	●	○	○	106
PROOF: A Proofreading Program/Spelling Checker	○	○	○	○	○	1386
PROS (Prospect, Letter, and Sales Facility)	○	○	○	○	○	1240
REALISE Real Estate Office Automation System	○	○	○	○	○	1201
SEARCH/PURGE — Mailing List Deduplication Program	○	○	○	○	○	1243
Wayne Medical System	○	○	○	○	○	793
WordMARC Author™	●	○	○	○	○	1404
WordMARC Composer™	●	○	○	○	○	1405

Operating systems

AIM Benchmark — Suite I	○	○	○	○	●	179
BASE/OE (Base Operating Environment)	●	○	○	○	○	800
LA.SYS	○	○	○	○	○	1321
QUEST, Standard MUMPS Teaching Program, and DOC	○	○	○	○	○	454
RESPOND	○	●	○	○	○	198
SAVER	○	●	○	○	○	595
TYCHO/HASP	○	●	○	○	○	1352
UNIX* System Tutorials	○	○	○	○	○	465
W	○	●	○	○	○	209
ZORT	○	○	○	○	○	606

Optics

ITEX/Q	○	○	●	○	○	239
OPTAN (Optical Systems, Evaluation, and Analysis)	○	○	○	○	○	516
Spectrum	○	○	○	○	○	788

Order processing

A-to-Z Compu-Share™ Accounting Family Order Entry	○	○	●	○	○	6
ABS Accounting Software	○	○	●	○	○	8
ACCDIBSIO (Accountant DIBS Inventory and Order Entry)	○	○	●	○	○	365
Accountant II Inventory Control System	○	○	○	○	○	367
Accountant II Order Entry System	○	○	○	○	○	367
Accountant II Purchasing System	○	○	○	○	○	368
Administrator 4/11	○	○	○	○	○	615
AMS (Apparel Manufacturing System)	○	○	○	○	○	984
APPGEN Inventory/Order Entry	○	○	○	○	○	369
ATOMS (Advanced Textile Operations Management Systems)	○	○	○	○	○	985
C-11 Purchase Order Processing	●	○	○	○	○	45
C-11 Sales Order Processing	●	○	○	○	○	1230
CAS.6 (Order Entry/Invoicing)	○	○	○	○	○	50
Casting Costing, Pricing, and Profit Analysis	○	○	○	○	○	962
CHIPS	○	○	○	○	○	371
COMADS (Computer-Aided Dispatching)	○	○	○	○	○	215
COP (Customer Order Processing), MCBA, Inc.	○	○	○	○	○	998
CP-11 Coupon Redemption System	○	○	○	○	○	1232
Customer Order Processing	○	○	○	○	○	371
DACMS (Distribution and Cash Management System)	○	○	○	○	○	372
DDP OEIF (Order Entry/Invoicing)	○	○	○	○	○	58
DDP PCSF (Purchasing Control System)	○	○	○	○	○	61
DIBS-11 Order Entry/Inventory Management for CTS-300	○	○	○	○	○	62
DIBS-11 Order Entry/Inventory Management for RSTS/E	○	○	○	○	○	63
Distribusyst (Distribution Management System)	○	○	○	○	○	374
Distribution Management System	○	○	○	○	○	375
DOVETAIL Wholesale Distributor	○	○	○	○	○	376
DTRO CDMS (Comprehensive Distribution Management System)	○	○	○	○	○	377
DTRO Order Processing System	○	○	○	○	○	379
Electronic Component Distribution System	○	○	○	○	○	380
EMDA's Super Car Rental and Control System	○	○	○	○	○	1419
Enterprise Distribution	○	○	○	○	○	381
EXDOC (Export Documentation System)	○	○	○	○	○	381
FACS — Inventory and Order Entry	○	○	○	○	○	382
FIFO: FIFO Inventory	○	○	○	○	○	68
FINCON (Financial Control System)	○	○	○	○	○	1004
Flexware Accounts Receivable	○	○	○	○	○	74
Flexware Order Processing	○	○	○	○	○	76
FUTURETECH — Mail Order Processing System	○	○	○	○	○	1235
GBMS (General Business Management System)	○	○	○	○	○	815

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
H-BUY	○	○	○	○	●	1006
Hospital Laboratory System	○	○	○	○	○	758
ICAMS (Inventory Control and Management System)	○	●	○	○	○	385
IFAS (Interactive Financial Accounting System)	○	○	●	○	○	89
IMS-8 (Integrated Mill-Management System-8)	○	○	○	○	○	155
Independent Laboratory System	○	○	○	○	○	759
Integrated Inventory Management System	○	○	●	○	○	636
Integrated Manufacturing and Financial System, Version 4.0	○	○	○	○	○	1012
intRlab	○	○	○	○	○	761
IOI: Order Entry	○	○	●	○	○	93
Laboratory Data Management System	○	○	○	○	○	763
MAILHOUSE™	○	○	●	○	○	1410
Manufacturer Order Processing	○	○	○	○	○	1018
MAXX D Accounting and Management System for the Distribution Industry	○	○	○	○	○	388
MBS OP (Manus Business Systems Order Processing)	○	○	○	○	○	390
MBS WD (Manus Business Systems Automotive Parts Warehouse Distributor System)	○	○	○	○	○	391
MINI-PHARM (Minicomputer Hospital Pharmacy Package)	○	○	○	○	○	772
MJA™ Order Entry/Inventory	○	○	○	○	○	99
NMI Customer Profile Package	○	○	○	○	○	1237
Office Supply/1000	○	○	○	○	○	1097
Order Eleven	○	○	○	○	○	393
Order Entry	○	○	○	○	○	104
Order Entry and Inventory	○	○	○	○	○	104
Order Entry and Invoicing	○	○	○	○	○	394
Order Entry Processing	○	○	○	○	○	1238
Order Entry System	○	○	○	○	○	395
Order Entry/Inventory	○	○	○	○	○	105
Order Entry/Inventory Control	○	○	○	○	○	105
Order Entry/Invoicing	○	○	○	○	○	395
Order Processing	○	○	○	○	○	396
Order Processing	○	○	○	○	○	396
Order Processing for Mailing List Rental	○	○	○	○	○	1238
Order Processing System	○	○	○	○	○	397
ORDERS Wholesale Distributor System	○	○	○	○	○	397
Papersoft	○	○	○	○	○	398
PBS (Produce Brokerage System)	○	○	○	○	○	156
Perspective/700 Bill of Materials System	○	○	○	○	○	1031
Perspective/700 General Ledger	○	○	○	○	○	117
Perspective/700 Inventory Management	○	○	○	○	○	399
Perspective/700 Order Processing	○	○	○	○	○	400
Pioneer COMMAND Purchase Order Processing Module	○	○	○	○	○	402
Pioneer COMMAND Sales Order Processing Module	○	○	○	○	○	403
PM32 Order Processing/Inventory/Sales Analysis	○	○	○	○	○	403
POM/T (Purchase Order Management/Tendering System)	○	○	○	○	○	644
PRO-IV Order Processing/Invoicing	○	○	○	○	○	126
ProBiz™ Order Processing and Inventory Control	○	○	○	○	○	404
Produce Distribution System	○	○	○	○	○	156
Purchase Order Processing	○	○	○	○	○	1040
Purchase Order System	○	○	○	○	○	223
RAM 12™	○	○	○	○	○	406
Sales Order Processing	○	○	○	○	○	1051
Sauer Library	○	○	○	○	○	136
SCHED: Manufacturing Scheduling System	○	○	○	○	○	1052
Specialty Item and Furniture Store System	○	○	○	○	○	1413
Spectrum	○	○	○	○	○	788
Sprint	○	○	○	○	○	789

1562 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
TBS Order Entry System with Inventory Control, Billing, and Sales Analysis	○	●	●	○		410
Television Operations Systems	○	○	○	○	○	1073
TOLAS	○	●	○	○	○	410
Viewmaster — Microfilm Indexing and Retrieval System	○	○	○	●	○	842
Warehousing/Order Entry/Inventory/Purchasing	○	○	○	○	○	412
WDS/2 (Warehouse Distributor System)	○	●	○	○	○	413
Welding Distributor System — TIMS BASIC +, 2 + 2, and Super + ...	○	○	○	○	○	414
WHOLESALE-11	○	○	○	○	○	415
Wholesale Lumber Management	○	○	○	○	●	1244
Wholesaler's Software System	○	○	○	○	○	416
Wine and Beverage Distribution System	○	○	○	○	○	417
XK-11	○	○	○	○	●	418
Payroll						
ABLE® Client Writeup System	○	●	○	○	○	8
ABS Accounting Software	○	○	●	○	○	8
ACCDIBSPR (Accountant DIBS Payroll)	○	○	○	○	○	366
Accounting	○	○	○	○	○	614
AiM™ Payroll — Interactive	○	○	○	○	○	31
AIM/PR (Accounting Information Manager for Payroll with Cost Accounting)	○	○	○	○	○	32
Apex Home Health Management System	○	○	○	○	○	735
APPGEN Accountants Client Write-Up	○	○	○	○	○	34
APPGEN Payroll	○	○	○	○	○	1168
ARCHON: PAY	○	○	○	○	○	1168
ATT (Automated Time and Attendance)	○	○	○	○	○	1169
Automotive System	○	○	○	○	○	1418
Business Information System	○	○	○	○	○	619
C-11 Payroll	○	○	○	○	○	44
CAS.4 (Payroll)	○	○	○	○	○	49
CLASS — Educational Payroll System	○	○	○	○	○	439
Client Write-Up	○	○	○	○	○	52
COLTS (Computerized On-Line Transportation System)	○	○	○	○	○	1418
Complete Accounting Package	○	○	○	○	○	54
Contractor Management System	○	○	○	○	○	216
Country Club Payroll System	○	○	○	○	○	166
CPA Payroll	○	○	○	○	○	55
CSI Business System	○	○	○	○	○	56
CSI Payroll	○	○	○	○	○	57
DDP PAY (Payroll System)	○	○	○	○	○	60
DIBS-11	○	○	○	○	○	62
DIBS-11/CTS-300	○	○	○	○	○	63
EUBA (Electrical Utility Billing and Accounting)	○	○	○	○	○	1183
FACS — Payroll	○	○	○	○	○	67
FCI Personnel System	○	○	○	○	○	657
Flexware Payroll	○	○	○	○	○	77
GIMS (Government Information Management System)	○	○	○	○	○	658
GOV-11: Governmental Management System	○	○	○	○	○	658
Government Payroll System	○	○	○	○	○	659
HDS/II (Healthcare Data Systems)	○	○	○	○	○	756
Hospitality Management System	○	○	○	○	○	1249
ICONS (Integrated Construction System)	○	○	○	○	○	220
Idaho Falls Payroll System	○	○	○	○	○	89
IFAS (Interactive Financial Accounting System)	○	○	○	○	○	89
Job Cost Accounting	○	○	○	○	○	818
L/P (Labor Performance), MCBA, Inc.	○	○	○	○	○	964

	PLOS	RSTS	RSX	RT-11	ULTRIX-11	Page
LT/PRX — Payroll and Personnel Management for Long-Term-Care Facilities	o	●	o	o	o	766
MANAGE — Data Base Management System	o	●	o	o	o	94
MJA™ Payroll and Personnel	●	o	o	o	o	100
MPY-11 (Municipal Payroll)	o	●	o	●	o	662
Multiuser Digital Accounting System	o	o	●	o	o	100
MUNIS (Municipal Information Systems)	o	o	o	●	o	663
MUNIS/PLUS	o	o	o	o	●	664
NFC Payroll Module	o	●	●	o	o	102
NHIS (Nursing Home Information System)	o	o	o	o	o	776
Office Supply/1000	o	●	o	o	o	1097
OPS (On-Line Payroll System)	o	●	o	o	o	103
PASS (Payroll and Staffing System)	o	o	o	o	o	778
Pay (Canadian Payroll)	o	●	o	o	o	107
Payroll	o	●	o	o	o	107
Payroll	o	●	●	o	o	108
Payroll	o	o	o	o	o	108
Payroll	o	o	●	o	o	109
Payroll	o	●	●	o	o	109
Payroll	o	●	●	o	o	110
Payroll	o	●	o	o	o	111
Payroll	o	o	o	o	o	111
Payroll	o	o	o	o	●	112
Payroll	o	●	o	o	o	113
Payroll	o	●	o	o	o	451
Payroll	o	o	o	o	o	779
Payroll	o	●	o	o	o	1172
Payroll	o	●	o	o	o	1172
Payroll (Canadian)	o	o	o	●	o	113
Payroll System	o	●	●	●	o	114
Payroll System	o	o	●	●	o	1172
Payroll System	o	●	o	o	o	1185
Payroll/Checkwriting System	o	o	o	●	o	115
PAYSOLVE (Payroll)	o	●	●	o	o	115
Personnel Administrator	o	o	o	o	o	451
Personnel Record System	o	●	o	o	o	1174
Plycom Core Accounting Systems	o	●	o	o	o	120
P/R (Payroll), MCBA, Inc.	o	o	●	●	o	1175
PRO-IV Payroll/Personnel Management	●	●	●	o	o	1175
ProBiz™ Payroll	o	o	●	o	o	129
RAFT (Revenue Accounting for Truckers)	o	o	o	●	o	1422
School Payroll Package	o	o	●	o	o	459
TBS Payroll Accounting	o	●	●	●	o	140
Television Operations Systems	o	o	o	o	o	1073
Temporary Services Personnel System	o	●	o	o	o	1176
Turnkey Data	o	●	●	●	o	146
UDS General Ledger Accounting	o	o	o	●	o	147
WRDBX Subroutine for Check Writing	o	●	o	o	o	254
Personal computing						
Bridge/86	o	●	●	o	●	1080
CP/M-86® for DIGITAL	o	●	●	●	o	1116
GRASP: Graphics Applications Processor	●	o	o	o	o	694
PC-DOS for DIGITAL	o	●	●	●	o	1131
poly-COM™	o	●	●	●	o	1332
RT-11 on the Professional	o	o	o	o	o	1143
TANGO	o	o	o	o	●	1349
XNS/ITP (Xerox Network Systems Internet Transport Protocols)	o	o	●	o	o	1362

Personnel

C-11 Hospital Resource Management	●	○	○	○	○	738
Chronometrix	○	○	○	○	●	962
CLASS — Education Personnel System	○	○	○	○	○	438
DDP PAY (Payroll System)	○	○	●	○	○	60
FCI Personnel System	○	○	○	○	○	657
Government Payroll System	○	●	○	○	○	659
LT/PRX — Payroll and Personnel Management for Long-Term-Care Facilities	○	○	○	○	○	766
MANEX (Manpower Expenditure Recording)	○	○	●	○	○	965
MJA™ Payroll and Personnel	●	○	○	○	○	100
Payroll	○	○	●	○	○	109
Payroll	○	○	●	○	○	110
Payroll	○	○	○	○	●	112
Payroll (Canadian)	○	○	●	○	○	113
Personnel Administrator	○	○	○	○	○	451
PLANFAX Actuarial System	○	○	○	○	●	643
ProBiz™ Payroll	○	○	○	○	○	129
PRSN (Personnel)	○	○	○	○	○	454
ROLMAN III	○	○	○	○	○	456
School Payroll Package	○	○	●	○	○	459
TBS Payroll Accounting	○	○	●	○	○	140
Temporary Nursing Personnel Agency System	○	○	○	○	○	790

Petroleum

AIM/FOD (Accounting Information Manager for Fuel Oil Delivery)	○	○	○	○	○	368
CPCS-I (WECON Computer Process Control System)	○	○	○	○	○	999
ES-LOG	○	○	○	○	○	424
FLIC	○	○	○	○	○	494
Fuel Company System	○	○	○	○	○	384
Fuel Oil Accounting/Delivery Scheduling	○	○	○	○	○	384
MICRO LP	○	○	○	○	○	1020
MINI LP	○	○	○	○	○	1022
MODS (Manus Oil Dealer System)	○	○	○	○	○	392
OGA\$ (Oil and Gas Accounting System)	○	○	○	○	○	425
Oil Burner Service/Inventory	○	○	○	○	○	1252
OMS (Oil Movement System)	○	○	○	○	○	425
RCS-7	○	○	○	○	○	1048
SSMS (Service Station Management System)	○	○	○	○	○	409
TIP (Tankage Inventory and Yields Programs)	○	○	○	○	○	426
TMS-4 (TANO Macro System, Version 4)	○	○	○	○	○	427
Wholesale/Liquid Product Inventory	○	○	○	○	○	415

Pharmaceutical

ABCON (Automated Batch Control)	○	○	○	○	○	980
Automated Powder Diffraction Data Collection and Analysis	○	○	○	○	○	1208
C-Chart System — Medical Accounting, Inventory	○	○	○	○	○	738
CAPS	○	○	○	○	○	740
CHEM-COST	○	○	○	○	○	991
COMPU-CHART — Medical Records Program for Long-Term-Care Facilities	○	○	○	○	○	747
DataCare	○	○	○	○	○	749
DOSRES (Quantal Dose-Response Analysis)	○	○	○	○	○	752
FLIC	○	○	○	○	○	494
HDS/II (Healthcare Data Systems)	○	○	○	○	○	756
InteRx™	○	○	○	○	○	760
LP (Linear Programming)	○	○	○	○	○	1016
MATCHUP: Assignment	○	○	○	○	○	1171

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Medication/Treatment Sheet System for Nursing Homes	○	○	○	●	○	770
MINI-PHARM (Minicomputer Hospital Pharmacy Package)	○	○	○	○	○	772
Multipharm	○	○	○	○	○	775
OSS (Optimal Sampling Schedule Designs)	○	○	○	○	○	1221
Pharmacy	○	○	○	○	○	780
Pharmacy Module: Leadership Series™	○	○	○	○	○	781
PRN-1 Pharmacy Package	○	●	○	○	○	783
QMS PROGRAMS® Computer Software/Product Shelf Life and Stability	○	○	○	○	○	1046
RxCom	○	○	○	○	○	787
RXS (Pharmacy System)	○	○	○	○	○	787
TEAMS® -TOX	○	○	○	○	○	1226
Pipeline simulation						
ABC/Gas	○	○	○	○	○	422
Planning aids						
ABC/MM (Maintenance Management System)	○	○	○	○	○	548
Automatic Business Control System	○	○	○	○	○	370
CAMPUS (Campus Planning Package)	○	○	○	○	○	434
Concept Capacity Planning	○	○	○	○	○	993
Concept Data Base Control — Operations	○	○	○	○	○	994
Concept Data Base Control — Materials	○	○	○	○	○	995
Data*Model Spreadsheet Management System	○	○	○	○	○	625
Dietary Scheduling System	○	○	○	○	○	751
EPOS (Engineering- and Project Management—Oriented Support System)	○	○	○	○	○	810
FMRP (Full Material Requirements Planning)	○	○	○	○	○	1004
H-PLAN/M	○	○	○	○	○	1008
IMCS (Interactive Manufacturing Control Systems)	○	○	○	○	○	1011
Integrated Manufacturing and Financial System, Version 4.0	○	○	○	○	○	1012
Key Conversational Planning System	○	○	○	○	○	964
PICAM	○	○	○	○	○	1032
Pigeonhole	○	○	○	○	○	1422
PRO-IV Tax Management	○	○	○	○	○	127
PRODSTAR-MRP	○	○	○	○	○	1039
QM (Quick-Mail)	○	○	○	○	○	1104
RABBIT-2	○	○	○	○	○	195
SFC (Shop Floor Control), MCBA, Inc.	○	○	○	○	○	1053
Spider II Manufacturing Planning and Control System	○	○	○	○	○	1056
STRADIS	○	○	○	○	○	409
WHAT-IS® — The Answer to Transportation and Supply/Distribution Networks	○	○	○	○	○	1423
Point of sale						
Abax Rental Management System	○	○	○	○	○	1246
Accounts Receivable	○	○	○	○	○	21
BOCS (Box Office Computer System)	○	○	○	○	○	163
Clothier	○	○	○	○	○	1408
Credit Authorization	○	○	○	○	○	1408
ICAS 1123-Plus (Inventory Control Accounting System)	○	○	○	○	○	1409
IN-TOUCH™	○	○	○	○	○	1409
Point of Sale	○	○	○	○	○	1411
POS/MIMS: Point-of-Sale System for Lumber Yards/Home Building Center Industry	○	○	○	○	○	1412
ProBiz™ Order Processing and Inventory Control	○	○	○	○	○	404
RAM 12™	○	○	○	○	○	406
Retail Furniture System	○	○	○	○	○	1412
Sales Lead Analysis	○	○	○	○	○	1242

1566 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
SpiriTrak™	○	○	●	○	○	1413
TRIMS (Tire Dealers and Retreaders Information Management System)	○	●	○	●	○	411
VantagePoint	○	●	○	○	○	1414
Wholesaler's Software System	○	●	○	○	○	416
Pre- and postprocessors						
3780 COMBOARD™	○	●	●	○	○	1260
BASTOC™ (BASIC to C)	○	○	○	○	○	864
CAMIC (Computer-Aided Microprocessing)	○	○	○	○	●	266
CMODEL — Finite Element Model Builder	○	●	○	○	○	480
COBEX-11	○	○	●	○	○	269
CPOST — Postplotter for Finite Element Output	○	●	○	○	○	485
DID-X.25	○	○	○	●	○	1291
EXPAND	○	○	●	○	○	880
G-Post (Generalized Postprocessor)	○	○	○	○	○	1005
H-CHAMP	○	○	○	○	●	1120
HASP COMBOARD™	○	●	○	○	○	1307
HCR/Pascal	○	○	○	○	○	890
HOL77 Precompiler for DIGITAL's FORTRAN-77	○	○	○	●	○	891
IF-11/3780	○	○	●	○	○	1314
IF-11/HDLC-X.25 Link-Level Software	○	○	○	○	○	1314
IF-11/X.25 Packet-Switched Network Firmware	○	○	●	○	○	1315
IF-11/X.25 PLUS PAD Software and Firmware	○	○	○	○	○	1315
IFTRAN Precompiler for PDP-11 FORTRAN	○	○	○	○	○	891
IGOR 1 (Interactive Graphic Operating Resource)	○	○	○	●	○	697
InterText™	○	○	○	○	○	1090
LISP for RSX-11	○	○	○	○	○	894
MINIMOVIE.BYU	○	○	○	○	○	511
NC Tape Verification for Manufacturing Operations	○	○	○	○	○	1025
NCL — Interactive Graphics Software	○	○	○	○	○	1025
NUFORM Level I	○	○	○	○	○	1028
NUFORM Level II	○	○	○	○	○	1028
PDP-8 Cross-Assembler and Utilities for RSX-11D	○	○	○	○	○	246
PLXY-11M	○	○	○	○	○	714
PLXY-11M-PLUS and PLXY-11/RSTS	○	○	○	○	○	714
PLXY-11/RT	○	○	○	○	○	715
RATFOR: Structured FORTRAN Preprocessor	○	○	○	○	○	929
ReadCOBOL™	○	○	○	○	○	929
SOLUTIONS DECK Design	○	○	○	○	○	340
SOLUTIONS DECK DMS	○	○	○	○	○	341
SOLUTIONS DECK Extract	○	○	○	○	○	342
SOLUTIONS DECK Master	○	○	○	○	○	343
SOLUTIONS DECK Transaction	○	○	○	○	○	344
SpeedCOBOL™	○	○	○	○	○	939
Stage 2/RSX	○	○	○	○	○	940
Stage 2/RT-11	○	○	○	○	○	940
STI-ANIMATION	○	○	○	○	○	535
STI-MATVAM	○	○	○	○	○	536
TCAT/C (Test Coverage Analysis Tool)	○	○	○	○	○	350
TEXT System for Technical Manuscript Preparation	○	○	○	○	○	1399
Presentation aids						
3D-Tic-Tac	○	○	○	○	○	160
ABC/GRAF	○	○	○	○	○	672
ATHENA/graph™ Presentation Business Graphics	○	○	○	○	○	673
ATHENA/slide	○	○	○	○	○	674
BASIC Demonstration Package	○	○	○	○	○	162
BIGCAL: A Calendar Scheduling Program	○	○	○	○	○	1078

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
BRLLP (Print-Out Braille Conversion Program)	○	○	●	○	○	1064
CALEND: A Calendar Program	○	○	○	●	○	164
Calendar Printing	○	○	○	○	○	164
CHART: Bar Charts	○	○	●	○	○	678
COMPOSE: VT200 Custom Character Set Generator Program	○	○	○	○	○	1369
Corgraph	●	○	○	○	○	679
CPS Graphics Package	○	○	○	○	○	680
Demonstrator	○	○	○	○	○	808
DIBOL String-Interpreting Subroutines	○	○	○	○	○	877
Direct Marketing and Mail Order Management System	○	○	○	○	○	1233
DMG/FLOW	○	○	○	○	○	681
Documentor/F	○	○	○	○	○	1373
DRWLIB	○	○	○	○	○	683
DTC (Desk Top Calendar)	○	○	○	○	○	1087
E Z Chart	○	○	○	○	○	684
European MINC Package #4 — Plotters	○	○	○	○	○	685
Everhart/Hoffing RSX Collection	○	○	○	○	○	1119
EZ Chart	○	○	○	○	○	685
FINGRAPH	○	○	○	○	○	686
FORTTRAN Graphics Support for the VT105	○	○	○	○	○	686
FORTTRAN Interface to IAS Subtasking	○	○	○	○	○	886
Framer	○	○	○	○	○	1379
Functional Subroutines	○	○	○	○	○	496
GIS® (Guidance Information System)™	○	○	○	○	○	444
HCGS	○	○	○	○	○	694
IAS105: VT105 FORTRAN Graphics Package for IAS	○	○	○	○	○	697
IB Graph	○	○	○	○	○	1089
INFOTEX	○	○	○	○	○	1381
IS-LEM Word Processing System	○	○	○	○	○	1382
Lawrence RUNOFF	○	○	○	○	○	1382
MACROCAT	○	○	○	○	○	1070
Marketing Strategy Simulation for Minicomputers	○	○	○	○	○	1236
MGSP (Multiware Graphics Subroutine Package)	○	○	○	○	○	701
Micro/GVS (Genesys Videotex System)	○	○	○	○	○	701
Micro/RSTS DECgraph-11	○	○	○	○	○	702
Micro/RSX DECgraph-11	○	○	○	○	○	702
Pie	○	○	○	○	○	707
PLOT55 for RSX-11	○	○	○	○	○	712
The Printer's Companion	○	○	○	○	○	1163
QUEST Graphical and Text Information System	○	○	○	○	○	717
RABBIT-2	○	○	○	○	○	195
RSTS/E DECgraph-11	○	○	○	○	○	720
RSX-11 TECO with Buffered Typeout, VT52 Window Support, and Doctor Game	○	○	○	○	○	1389
RSX-11M-PLUS DECgraph-11	○	○	○	○	○	721
RT-11/FORTTRAN Support for Data Acquisition and Display on a VT105	○	○	○	○	○	250
SATURN-GRAPH™	○	○	○	○	○	723
SATURN-WP™ Word Processing/List Processing	○	○	○	○	○	1394
SCPLT: CRT Screen Plot Program	○	○	○	○	○	724
SDM (Symbolic Drawing Machine)	○	○	○	○	○	724
SIMPLEPLOT Mark 2	○	○	○	○	○	725
SIMPLEPLOT Mark 2 Section 2	○	○	○	○	○	726
SIMPLEPLOT Mark 2 Section 4	○	○	○	○	○	726
SURFAC	○	○	○	○	○	728
TELEP.BAS (Address Manipulator)	○	○	○	○	○	841
TESS™ (The Extended Simulation System)	○	○	○	○	○	729
TFONT (Text Font Design Program)	○	○	○	○	○	729

	P/OS	R/ST	RSX	RT-11	ULTRIX-11	Page
TXTWRT: An RT-11 Text Formatting Program	○	○	○	●	○	1400
TYPSET — Digitized Character Subroutines	○	○	●	○	○	1401
VT105 Graphics Package	○	○	○	○	○	731
WCC CAT (Computer-Assisted Translation and Multilanguage WP System)	○	○	○	○	○	1074
ZCHART — Business Graphics	○	○	○	○	○	1112
Printing						
Abax Mailing Label System	○	●	○	○	○	1077
Bridge/86	○	○	●	○	○	1080
BRLLP (Print-Out Braille Conversion Program)	○	○	○	○	○	1064
CFMS (Computerized Forms Management System)	○	○	○	○	○	1081
COMPAG	○	○	○	○	○	1369
COMPAG: Combine Pages for the Professional 300	○	○	○	○	○	1369
COMPOSE: VT200 Custom Character Set Generator Program	○	○	○	○	○	1369
CTS-300 DECtype	○	○	○	○	○	1370
CTS-300 ISAM FCG Utilities	○	○	○	○	○	564
DOC: Document Output Program	○	○	○	○	○	1373
DPH: File Header Dump Program	○	○	○	○	○	568
DTC (Desk Top Calendar)	○	○	○	○	○	1087
Duxbury Braille Translator	○	○	○	○	○	1068
DX/11M	○	○	○	○	○	1299
DX/RSTS	○	○	○	○	○	1299
EDMACS: A Screen Editor Program	○	○	○	○	○	1375
European MINC Package #1 — Utilities	○	○	○	○	○	571
File Management Utility, Version 2.3	○	○	○	○	○	573
Forms-Control Simulation for DECwriters and Teletypes	○	○	○	○	○	1379
GIGIC2: GIGI Graphics Printout on a Low-Priced C-ITOH Printer	○	○	○	○	○	690
GPR (Graphics Plotting Routines)	○	○	○	○	○	693
Graph Package	○	○	○	○	○	693
GSYS.BAS: System Management Utility	○	○	○	○	○	1119
HCGS (Host Computer Graphics Software)	○	○	○	○	○	695
HC.MAC — A Handler that Converts a Second Terminal into a Line Printer	○	○	○	○	○	1380
KEREN	○	○	○	○	○	1069
LA.SYS	○	○	○	○	○	1321
Lawrence RUNOFF	○	○	○	○	○	1382
LCP01 Software	○	○	○	○	○	1383
LEXET	○	○	○	○	○	1092
LG.SYS: Centronics 739 Serial Printer Handler	○	○	○	○	○	1322
Line Printer Plot	○	○	○	○	○	699
LISTER: Listing Utility Program	○	○	○	○	○	1383
LISTRX: RSX-11D Multicolumn Listing Utility	○	○	○	○	○	1384
LST: A Paging Utility for Non-Form-Feed Devices	○	○	○	○	○	1384
LXY-11 Plotting Package	○	○	○	○	○	699
Lyrix™ Word Processing System	○	○	○	○	○	1093
Micro/RSTS DECgraph-11	○	○	○	○	○	702
Micro/RSX DECgraph-11	○	○	○	○	○	702
Micro/RSX DECtype	○	○	○	○	○	1384
MSPOOL	○	○	○	○	○	1385
PLANS: A Program to Plot Hard Copy on the Versatec Printer	○	○	○	○	○	246
PLOTFR.BAS: GIGI/DECwriter IV	○	○	○	○	○	713
PLOTXY.BAS: GIGI/Houston Instruments DMP29R X-Y Plotter Graphics Utilities	○	○	○	○	○	713
PLXY-11M	○	○	○	○	○	714
PLXY-11M-PLUS and PLXY-11/RSTS	○	○	○	○	○	714
PLXY-11/RT	○	○	○	○	○	715
PRINIT: Printer Initialization Routine for the LA120 Printer	○	○	○	○	○	194

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
The Printer's Companion	●	○	○	○	○	1163
Q-FORM	○	○	○	○	●	1101
Q-ONE	○	○	○	○	●	1103
Rhintek Plot Package	○	○	●	○	○	719
ROU: Receive Queue and File Scan Utility	○	○	○	○	○	592
RSTS Smart Mailer	○	○	○	○	○	1106
RSTS/E DECgraph-11	○	○	○	○	○	720
RSX-11 Magtape Cornucopia	○	○	○	○	○	1138
RSX-11M-PLUS DECgraph-11	○	○	○	○	○	721
RSX-11M-PLUS DECType	○	○	○	○	○	1390
RUNOFF, Bonner Lab	○	○	○	○	○	1390
RUNOFF for RSX-11 and RSTS/E	○	○	○	○	○	1391
RUNOFF: M02.4-14	○	○	○	○	○	1391
RUNOFF M02.4H for the Professional 300	○	○	○	○	○	1392
SALGLA (Salivary Gland Analysis)	○	○	○	○	○	788
SIMQU (Simulated Line Printer Queue)	○	○	○	○	○	201
SPOOL: Foreground Line Printer Spooler	○	○	○	○	○	602
Sprint	○	○	○	○	○	201
TEXT System for Technical Manuscript Preparation	○	○	○	○	○	1399
TFONT (Text Font Design Program)	○	○	○	○	○	729
TPINS (Times Publishing Interactive Newsprint Inventory System)	○	○	○	○	○	1073
USERBASICS	○	○	○	○	○	358
/usr/tools	○	○	○	○	○	1401
VT125 Graphics Hard Copy on an EPSON MX-80 Serial Printer	○	○	○	○	○	731
WORD-11	○	○	○	○	○	1403
Process control						
ABCON (Automated Batch Control)	○	○	○	○	○	980
ADACS (Advanced Distributed Acquisition and Control System)	○	○	○	○	○	980
AIM (Automated Industrial Monitoring)	○	○	○	○	○	981
AIM Batch (Automated Industrial Monitoring)	○	○	○	○	○	982
Athena Distributed Control System	○	○	○	○	○	549
AUTO-BOP	○	○	○	○	○	985
AUTO-CHEM	○	○	○	○	○	468
AUTO-MET and Q-VAR	○	○	○	○	○	986
C EXECUTIVE, Release 2.0	○	○	○	○	○	1115
CMMS (Comprehensive Maintenance Management System)	○	○	○	○	○	550
CORAL 66	○	○	○	○	○	874
CPCS-I (WECON Computer Process Control System)	○	○	○	○	○	999
Csharp Realtime Toolkit	○	○	○	○	○	271
DID-X.25	○	○	○	○	○	1291
DPM (Dyeing Process Management)	○	○	○	○	○	1002
FLIC	○	○	○	○	○	494
FORSIM	○	○	○	○	○	495
GKS-GRAL	○	○	○	○	○	692
H-BUY	○	○	○	○	○	1006
H-MAKE	○	○	○	○	○	1007
IF-11/HDLC-X.25 Link-Level Software	○	○	○	○	○	1314
IMS-8 (Integrated Mill-Management System-8)	○	○	○	○	○	155
Milltech: Melt Management System	○	○	○	○	○	1021
MSPOOL	○	○	○	○	○	1385
MYCRO/11 Process Management System	○	○	○	○	○	1024
OMS (Oil Movement System)	○	○	○	○	○	425
OS/FT (File System)	○	○	○	○	○	585
OS/RT (Real Time O.S. Kernel)	○	○	○	○	○	1130
PC-11 (Process Control Operating System)	○	○	○	○	○	1131
PC/DBS (Process Control Data Base System)	○	○	○	○	○	1030
PMCS (Process Monitoring and Control System)	○	○	○	○	○	1035

1570 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
PRO (Process-Oriented Software)	o	o	o	o	o	1038
Process Supervisory Control	o	o	o	o	o	426
QBLIB (CAMAC Subroutine Library)	o	o	o	o	o	1222
QMS PROGRAMS® Computer Software/Defect Analysis	o	o	o	o	o	1042
QMS PROGRAMS® Computer Software/Logistics	o	o	o	o	o	1044
QMS PROGRAMS® Computer Software/Process Capability Studies	o	o	o	o	o	1045
QMS PROGRAMS® Computer Software/Statistical Process Control	o	o	o	o	o	1046
RCS-7	o	o	o	o	o	1048
Real-Aid	o	o	o	o	o	1049
RES	o	o	o	o	o	524
RSX-620 (IPC 620 CIM to RSX-11M/M-PLUS Communications Support Package)	o	o	o	o	o	1050
RTMASCOT	o	o	o	o	o	1146
Salerno/SPM+ (Statistical Process Monitoring)	o	o	o	o	o	1050
SCORE (Supervisory Control of Refrigeration Equipment)	o	o	o	o	o	1052
SETCON: Process Control Software for Industrial Processes	o	o	o	o	o	1053
SIN-DAS (Single-User Data Acquisition System)	o	o	o	o	o	251
SPR (Standard Product Routing), MCBA, Inc.	o	o	o	o	o	1057
TMS-4 (TANO Macro System, Version 4)	o	o	o	o	o	427
Production control						
6600 Plant Management System	o	o	o	o	o	978
A-CLASS	o	o	o	o	o	978
ABC/Gas	o	o	o	o	o	422
AdA — Advertising Agency System	o	o	o	o	o	1064
ADACS (Advanced Distributed Acquisition and Control System)	o	o	o	o	o	980
ADAM (Automated Dairy and Management)	o	o	o	o	o	150
AGGDISS	o	o	o	o	o	214
AMS (Apparel Manufacturing System)	o	o	o	o	o	984
APR (Automated Production Reporting) System	o	o	o	o	o	422
Bar-Coded Systems	o	o	o	o	o	800
BASEWAY Software	o	o	o	o	o	987
C-DASS (Computer Distribution and Storage System)	o	o	o	o	o	990
COMADS (Computer-Aided Dispatching)	o	o	o	o	o	215
Concept Capacity Planning	o	o	o	o	o	993
Concept Data Base Control — Operations	o	o	o	o	o	994
Concept Data Base Control — Materials	o	o	o	o	o	995
Concept Inventory Management	o	o	o	o	o	995
Concept Material Requirements Planning	o	o	o	o	o	996
Concept Product Costing — Materials	o	o	o	o	o	996
Concept Product Costing — Operations	o	o	o	o	o	997
Concept Purchase Order Control	o	o	o	o	o	997
Concept Works Order Control — Materials	o	o	o	o	o	997
Concept Works Order Control — Operations	o	o	o	o	o	998
Cybergraphic Integrated Software	o	o	o	o	o	1067
DOVETAIL MRP (Materials Requirement Planner)	o	o	o	o	o	1001
FEED-MAN Ration Preparation	o	o	o	o	o	152
H-MAKE	o	o	o	o	o	1007
IMAGES II +	o	o	o	o	o	698
Job Costing	o	o	o	o	o	1015
Labor Performance	o	o	o	o	o	1016
Laundry Module: Leadership Series™	o	o	o	o	o	764
MAESTRO	o	o	o	o	o	1018
Manufacturer Order Processing	o	o	o	o	o	1018
Manufacturing Control System	o	o	o	o	o	1019
MIL-Concept Production Control System	o	o	o	o	o	1021
MRP (Material Requirements Planning), MCBA, Inc.	o	o	o	o	o	1024
NC Tape Verification for Manufacturing Operations	o	o	o	o	o	1025

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
PFS	○	○	○	○	○	156
Pioneer COMMAND Master Production Scheduling Module	○	●	○	○	○	1033
Pioneer COMMAND Production Control Module	○	●	○	○	○	1035
PRINCE (Production Information Center)	○	○	●	○	○	1037
ProBiz™ Job Costing/Work in Process	○	○	●	○	○	1039
PRODSTAR-MRP	○	○	○	○	○	1039
Production Control Systems	○	○	○	●	○	405
QMS PROGRAMS® Computer Software/Optimum Inspection						
Strategies	○	○	●	○	○	1045
Real-Time Production Monitoring System	○	○	○	●	○	1049
RSX-620 (IPC 620 CIM to RSX-11M/M-PLUS Communications						
Support Package)	○	○	●	○	○	1050
RSX-620 (IPC 620 CIM to RSX-11M/M-PLUS Communications						
Support Package)	○	○	●	○	○	1050
Sales Order Processing	○	●	○	○	○	1051
SCHEDE: Manufacturing Scheduling System	○	○	○	●	○	1052
Shop Floor Control	○	○	●	○	○	1054
Shop Floor Data Collection	○	○	○	●	○	1054
Shop Schedule and Machine Loading	○	○	○	○	●	1055
Soft Drink Bottler's Package	○	○	○	○	●	408
Spider II Manufacturing Planning and Control System	○	○	○	○	○	1056
SPR (Standard Product Routing), MCBA, Inc.	○	○	○	○	○	1057
TEC Manufacturing System	○	○	○	○	○	1059
Programming tools						
ABC	○	○	○	○	○	256
ABC/GRAF	○	○	○	○	○	672
ADE/RSTS: Information Management for Office Professionals	○	○	○	○	○	1160
ADE/RSX	○	○	○	○	○	1160
ADT: A Debug Driver for RT-11 V4	○	○	○	○	○	257
Advanced Development Tool Kit	○	○	○	○	○	258
Aide-De-Camp™ Software Engineering Environment	○	○	○	○	○	258
ALGOL for RT-11	○	○	○	○	○	856
Allen-Bradley Translator Software	○	○	○	○	○	983
APL-11	○	○	○	○	○	857
APL-11 V1.0 for RT-11, Plus Other Software	○	○	○	○	○	559
APPGEN Applications Generator	○	○	○	○	○	259
ASM65 — Cross-Assembler for the 6502 Microprocessor	○	○	○	○	○	260
AUTOPRO (Automatic Programming)	○	○	○	○	○	799
BASIC-11 Extension Routines	○	○	○	○	○	860
BASIC-11/RT-11	○	○	○	○	○	861
BASIC Business Package	○	○	○	○	○	260
BASIC-L	○	○	○	○	○	861
BASIC-PLUS-2 for IAS	○	○	○	○	○	862
BASIC-PLUS-2 for RSTS/E	○	○	○	○	○	862
BASIC-PLUS-2 for RSX-11M and RSX-11M-PLUS	○	○	○	○	○	863
BASIC-PLUS System Dependency Flagger	○	○	○	○	○	229
BOS/AutoClerk	○	○	○	○	○	261
BOS/MicroCobol	○	○	○	○	○	864
BSO/Assembler Microprocessor Relocating Assemblers	○	○	○	○	○	262
BSO/C Compiler	○	○	○	○	○	262
BSO/Debug Microprocessor Symbolic Debuggers	○	○	○	○	○	263
BSO/Mlib Microprocessor Program Librarian	○	○	○	○	○	263
BSO/Mlink Microprocessor Program Linker	○	○	○	○	○	264
BSO/Objcnv Format Conversion Program	○	○	○	○	○	230
BSO/Pascal Compiler	○	○	○	○	○	264
BSO/Tekld Tektronix Emulator Loading Program	○	○	○	○	○	1270
C Cross-Compiler for National Semiconductor Series 32000	○	○	○	○	○	865

1572 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
C-DASS (Computer Distribution and Storage System)	o	o	●	o	o	990
C Language System (Binary Version) for the Professional 300	o	o	o	●	o	865
C Language System in RT-11 Format	o	o	●	●	o	866
C Language System, Second Master Release	o	●	●	●	o	867
C Language System with Native Toolkit	●	o	o	o	o	868
C Native and Cross-Compilers	●	●	●	●	●	868
CAMAC Support Library for Industrial Systems	o	o	●	●	o	266
Cardware Disk Subsystem	o	●	●	●	o	1161
CARS (Computer Audit Retrieval System)	o	●	●	●	o	183
CAST® (Computer-Assisted Self-Training)	o	o	o	o	o	435
CDL2 Compiler	o	o	o	o	o	870
CLASS — IMPRS	o	●	o	o	o	439
CLE and BCE: Command Line Editors for RSX-11M	o	o	●	o	o	1368
CLIP (Command Language Interpreter)	o	●	o	o	o	268
Clock Generator	o	●	●	●	o	183
CLUE™ (C (Source Level) Linecount Utility)	o	o	●	o	o	268
COBEX-11	o	●	●	o	o	269
COBOL	o	o	●	o	o	871
COBOL-81/RSTS/E	o	o	●	o	o	871
COBOL-Plus	o	o	o	o	o	873
Complete File Sort Utility	o	o	o	●	o	563
Computer Byte or Word Checker	o	o	o	●	o	231
CONPAX	o	●	●	o	o	232
Control C Trap Handler for FORTRAN	o	o	●	o	o	873
CORAL 66	o	o	●	o	o	874
CPLIB	o	o	o	o	o	269
Cross-Assemblers	o	o	o	●	o	270
CTS-300	o	o	o	o	o	1117
DBL (Data Business Language)	o	●	●	●	o	874
DECCOD2	o	o	o	●	o	234
DECODE3 — RT-11 SAV/LDA Files Disassembler	o	o	o	●	o	235
DECODE4: RT-11 SAV Files Disassembler	o	o	o	o	o	235
DIBOL Collection	o	●	●	o	o	275
DIBOL Translator	o	o	o	●	o	877
DMG/FLOW	o	●	o	o	o	681
DOC	o	●	o	o	o	1373
DSM-11	o	o	o	o	o	1118
DTLIB	o	o	o	●	o	276
EasyEntry Forms Management and Data Entry System	●	●	●	o	o	277
ED	o	o	o	●	o	1374
Elliptic Integrals and Functions	o	o	o	●	o	1211
Enforcer I™	o	o	o	o	o	278
Everhart/Hoffing RSX Collection	o	o	●	o	o	1119
Extension Routines for MU BASIC	o	o	o	o	o	880
FCP (FORTRAN Code Preprocessors)	●	o	o	o	o	881
FDT (FORTRAN Debugging Tool)	o	o	●	o	o	279
FETCH.B: An Editor in MU BASIC	o	o	o	●	o	1376
FIXIT: BASIC Translator	o	●	●	o	o	881
Flexware Application Development System	o	o	o	o	o	281
FMS-11/RSX	o	o	●	o	o	1377
FMS-11/RT-11	o	o	o	●	o	1378
FOCAL RT	o	o	o	●	o	882
FORMAT (Forms Management Transaction System), Version 5.1	o	o	o	o	o	283
FORODT: FORTRAN Debug Routine for RT-11	o	o	o	●	o	284
FORTH: Programming System	o	o	o	●	o	1213
FORTRAN-77 DEBUG/RSX, RSTS/E, IAS	o	●	●	o	o	883
FSORT3	o	o	o	o	o	576
GAM (Graphic Access Method)	o	o	●	o	o	687

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
GAMKED and CURKED: Programs for Editing GAMMA-11 and CURVE Macros	○	○	○	●	○	1379
GDL (Graphic Display Library)	○	○	○	○	○	688
GINO	○	●	●	●	●	691
GKS-GRAL	○	○	○	○	○	692
GKS/C	○	○	○	○	●	692
HCR/EDIT	○	○	○	○	○	1380
HOL77 Precompiler for DIGITAL's FORTRAN-77	○	○	○	○	○	891
IFTRAN Precompiler for PDP-11 FORTRAN	○	○	○	○	○	891
IMPRS	○	●	○	○	○	816
IMSL Library	○	●	○	○	○	506
INDENT/BASIC-PLUS-2 Programming Templates	○	○	○	○	○	287
INDEX: FORTRAN Cross-Referencer	○	○	○	○	○	892
INDEX: FORTRAN Cross-Referencer	○	○	○	○	○	892
InterUpt (ISM Universal Programming Tool)	○	○	○	○	○	287
KBSET: System Start-Up for RSTS/E	○	●	○	○	○	189
Kermit and CPMUG Grab Bag	○	○	○	○	○	1318
KMV11-A Development Tools	○	○	○	○	○	290
KSAM (Keyed Sequential Access Method)	○	○	○	○	○	290
KW11-C Subroutines	○	○	○	○	○	190
KXMLNK (Konelar Extended Memory Linker)	○	○	○	○	○	291
KXT11-CA Peripheral Processor Tool Kit/RSX	○	○	○	○	○	1320
KXT11-CA Peripheral Processor Tool Kit/RT-11	○	○	○	○	○	1321
LALR (1) Parser Constructor to Translate Computer Languages	○	○	○	○	○	893
LASL Cornucopia #1	○	○	○	○	○	291
LIB.FOR Library Routines	○	○	○	○	○	291
LINK: FORTRAN-Callable Task Linking	○	○	○	○	○	292
Logo for the Professional 300	●	○	○	○	○	449
LSI-11 Microprogramming Tools, Version 1.0	○	○	○	○	○	292
M-CUBED — Multiple Microprocessor MACRO Cross-Assembler	○	○	○	○	○	293
M6800/01/05/09 Cross-Software Packages	○	○	○	○	○	293
MACRO-05 MC6805 Cross-Development Tools	○	○	○	○	○	895
MACRO-09 MC6809 Cross-Development Tools	○	○	○	○	○	895
MACRO-11 Input/Output Macro Subroutines Library	○	○	○	○	○	295
MACRO-65 6502 Cross-Development Tools	○	○	○	○	○	896
MACRO-68 MC68000/10 Cross-Development Tools	○	○	○	○	○	897
MACRO-80 8080/8085 Cross-Development Tools	○	○	○	○	○	897
MACRO-86 8086/8088 Cross-Development Tools	○	○	○	○	○	898
MACRO-8K Z-8000/1/2/3/4 Cross-Development Tools	○	○	○	○	○	898
MACRO Library Macros for MACRO-11 Program Development and Debug	○	○	○	○	○	295
MACRO-MC MC6800/01/02/03/08 Cross-Development Tools	○	○	○	○	○	899
MACRO Package for MACRO-11 to Assemble Motorola 680X Code	○	○	○	○	○	900
MACRO-Z8 Z-80 Cross-Development Tools	○	○	○	○	○	901
MacroVAX	○	○	○	○	○	902
MACSP (MACRO-11/SP Structured Programming Macros)	○	○	○	○	○	902
MACSUB: RSX-11M MACRO Subroutines	○	○	○	○	○	903
MACSYS-RT (MACRO-11 Development System Software)	○	○	○	○	○	296
MAGIC/L™	○	○	○	○	○	903
M/APS (Menu/Authorization Processor System)	○	○	○	○	○	296
Memory Dump	○	○	○	○	○	299
MENU-11/RSTS	○	○	○	○	○	299
Menu Presentation Software	○	○	○	○	○	582
THE MENU SYSTEM	○	○	○	○	○	300
MGSP (Multiware Graphics Subroutine Package)	○	○	○	○	○	701
Micro-Master Data Base Applications Generator	○	○	○	○	○	300
Microbench 6800 Cross-Assembly Package	○	○	○	○	○	301
Microbench 68000 Cross-Assembly Package	○	○	○	○	○	302

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Microbench 6805 Cross-Assembly Package	o	•	•	•	o	303
Microbench 6809 Cross-Assembly Package	o	•	•	•	o	304
Microbench 8021/8035/8048/8748 Cross-Assembly Package	o	•	•	•	o	305
Microbench 8051 Cross-Assembly Package	o	•	•	•	o	306
Microbench 8080/8085 Cross-Assembly Package	o	•	•	•	o	307
Microbench 8086/8087/8088 Cross-Assembly Package	o	•	•	•	o	308
Microbench C Cross-Compiler for the Intel 8086/8087/8088	o	o	•	•	•	309
Microbench FORTRAN-77 Cross-Compiler for the Intel 8086/8088	o	•	•	•	o	310
Microbench Z80 Cross-Assembly Package	o	•	•	•	o	313
Microbench Z8000 Cross-Assembly Package	o	•	•	•	o	314
microMAGIC Microprocessor Software Development Package	o	o	•	•	o	905
Micro/RSTS BASIC-PLUS-2	o	•	•	•	o	906
Micro/RSTS COBOL-81	o	•	•	•	o	906
Micro/RSTS FORTRAN-77 DEBUG	o	•	•	•	o	317
Micro/RSX BASIC-PLUS-2	o	o	•	•	•	907
Micro/RSX FORTRAN-77 DEBUG	o	o	•	•	•	318
MIMER: The Software Machine	o	o	•	•	o	825
MINC BASIC	o	o	•	•	o	910
MIRA	o	o	•	•	o	319
Mistress "Plus"	o	o	•	•	o	826
Mistress/32	o	o	•	•	o	828
Mixed-Radix Fourier Transform Program	o	o	•	•	o	242
MJCLOCK (Multijob Clock Program)	o	o	•	•	o	191
Modula-2/RSX	o	o	•	•	o	911
Monitor Commands for Namelists Package	o	o	•	•	o	192
Motorola 68000/10 Cross- and Resident Assembler	o	o	•	•	o	320
MPS (Menu Presentation Software)	o	o	•	•	•	1162
MRMLIB	o	o	•	•	o	912
MUMPS-11 Library Tape	o	o	•	•	o	321
NCL — Interactive Graphics Software	o	o	•	•	o	1025
Objective-C	o	o	•	•	•	913
On-Line Symbolic Region Access Utility for RSX-11/IAS	o	o	•	•	o	1129
Pascal-2™	•	•	•	•	o	914
Pascal-2™ Cross-Compiler to Target 68K with Concurrency Package ..	o	o	•	•	o	322
Pascal Formatter	o	o	•	•	o	323
Pascal Native and Cross-Compilers	•	•	•	•	•	915
Pascal/RSX	o	o	•	•	o	917
PDL and PDL/81 (Program Design Language)	o	o	•	•	•	917
Peregrine Four	o	o	•	•	•	323
PL-11: High-Level Assembler Language	o	o	•	•	o	918
PMM (Paged Memory Manager)	o	o	•	•	o	324
polyFORTH II	o	o	•	•	o	1132
Poor Man's Program Design Language for RSX-11/IAS	o	o	•	•	o	919
PRM-11 (Pascal Record Management-11)	o	•	•	•	o	919
PRO-IV Applications Processor	•	•	•	•	o	920
PRO-RDM (Responsive Data Manager)	o	•	•	•	•	325
PRO/BASIC	•	•	•	•	o	921
PRO/COBOL-Plus™	o	o	•	•	o	921
Professional CTS-300	o	o	•	•	o	1133
Professional Host Tool Kit	o	o	•	•	o	922
Professional Host Tool Kit BASIC-PLUS-2	o	o	•	•	o	923
Professional Host Tool Kit COBOL-81	o	o	•	•	o	923
Professional Host Tool Kit DIBOL	o	o	•	•	o	923
Professional Host Tool Kit FORTRAN-77	o	o	•	•	o	924
Professional Host Tool Kit FORTRAN-77 DEBUG	o	o	•	•	o	925
Professional Host Tool Kit Pascal	o	o	•	•	o	925
Professional Real-Time Interface Library	o	o	•	•	o	247
PROM/RT-11	o	o	•	•	•	1337

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
PRO/Producer Tool Kit	●	○	○	○	○	326
PRO/Scientific Subroutine Package	●	○	○	○	○	327
PRO/Tool Kit	●	○	○	○	○	327
PRO/Tool Kit BASIC-PLUS-2	●	○	○	○	○	925
PRO/Tool Kit COBOL-81	●	○	○	○	○	926
PRO/Tool Kit DIBOL	●	○	○	○	○	926
PRO/Tool Kit FORTRAN-77	●	○	○	○	○	927
PRO/Tool Kit Real-Time Interface Library	●	○	○	○	○	328
PRO/VENIX™ Software Development Kit	○	○	○	○	○	329
/rdb™ (Relational Data Base Management System)	○	○	○	○	●	588
Reese BASIC	○	○	●	○	○	930
RENUM: FORTRAN Renumbering Program	○	○	○	●	○	330
RENUM: FORTRAN Renumbering Program	○	○	○	○	○	330
RENUM.BAS (BASIC File-Renumbering Program)	○	○	○	●	○	331
RENUM/PRENUM BASIC Renumberer	○	●	○	○	○	331
REPGEN (Report Generator)	○	○	○	○	○	1104
RESEQX	○	●	○	○	○	331
RQRDMA: DMA Interlock for RSX	○	○	○	○	○	332
RSTS-11 Library Tape 1	○	○	●	○	○	1136
RSTS-11 Library Tape 2	○	○	●	○	○	1136
RSTS Libraries for Swedish Pascal	○	○	●	○	○	931
RSTS MACRO Odds and Ends	○	○	●	○	○	931
RSTS/E File List and Scan Utilities	○	○	○	○	○	332
RSX-11 BASIC	○	○	○	○	○	932
RSXLIB	○	○	○	○	○	333
RT-11 to UNIX* Transfer Utilities	○	○	○	○	●	592
RT-NEWUSER V2.0	○	○	○	○	○	594
RTEM-11 (RT-11 Emulator for RT-11, Version 5.1)	○	○	○	○	○	334
RTL/2 (Real-Time Language)	○	○	○	○	○	935
Safe C Statement-Level Profiler™	○	○	○	○	○	336
Safe C™ Interpreter	○	○	○	○	○	936
SAL-11 (Structured Assembly Language)	○	○	○	○	○	937
SB-5 (System Builders-5)	○	○	○	○	○	337
SCCS (Source Code Control system)	○	○	○	○	○	338
SDP	○	○	○	○	○	338
Select	○	○	○	○	○	596
SELECT	○	○	○	○	○	1394
Series IV System	○	○	○	○	○	938
Single-, Double-, Triple-Precision ASCII to Decimal/Decimal to ASCII	○	○	○	○	○	251
SISINF	○	○	○	○	○	339
SKIPAG: File Utility to Skip Blocks/Pages	○	○	○	○	○	597
SNP11M for RSX-11M and RSX-11M-PLUS	○	○	○	○	○	1149
SofForms	○	○	○	○	○	340
SourceTools™	○	○	○	○	○	345
SPAL-11 (Structured Programming Using Assembly Language)	○	○	○	○	○	939
STM (Storage Manager)	○	○	○	○	○	345
SUBS (Standard Subroutine Library), Version II	○	○	○	○	○	346
SYM (Symbol Manager)	○	○	○	○	○	347
SYMBOL: Symbol Table Search Program	○	○	○	○	○	348
SYMBUG (Symbolic Debugger for Use with MACRO Programs)	○	○	○	○	○	348
TAM (Terminal Access Module)	○	○	○	○	○	203
TBS PDS (Pascal Development System)	○	○	○	○	○	349
TCU-50DYR Handler for RSX-11M/M-PLUS and Micro/RSX	○	○	○	○	○	205
TECO-11 (Text Editor and Corrector) for RSTS/E	○	○	○	○	○	1396
TECO, COPY, SRD, MCR, and RNO for P/OS	●	○	○	○	○	351
TECO Full-Screen Editor	○	○	○	○	○	1397
TECO V28 for RT-11	○	○	○	○	○	1397
TECO V36	○	○	○	○	○	1398

1576 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
TECO V36 for RSX-11D, RSX-11M, RSX-11M+, and IAS	○	○	●	○	○	1398
TESTWARE	○	●	●	○	○	351
The Toolbox	○	○	○	○	○	352
TRACE.MAC/TR.MAC	○	○	○	○	○	352
Tracer C Debugger	○	●	●	○	○	353
TSXLIB: A Library Implementation of EMTs for TSX-PLUS Version 5.1	○	○	○	○	○	1153
TXTWRT: An RT-11 Text Formatting Program	○	○	○	○	○	1400
ULTRIX-11 Operating System	○	○	○	○	●	1154
UMDL (Universal Microprocessor Development Laboratory)	○	○	○	○	○	355
UNITAP/UNIWRI	○	○	○	○	○	253
UNIX* Utility Pack	○	○	○	○	○	356
USER-11 Database Management System	○	○	○	○	○	357
User Command Linkage-Plus	○	○	○	○	○	357
USX51 8051 Operating System	○	○	○	○	○	1156
USX86 8086 Operating System	○	○	○	○	○	1156
USX96 8096 Operating System	○	○	○	○	○	1156
VAMP	○	○	○	○	○	1355
Vandata Z80 C Cross-Compiler	○	○	○	○	○	942
Variable-Metric Routine for Function Minimization	○	○	○	○	○	545
VCS (Viking Control System)	○	○	○	○	○	208
VDE (Viking Data Entry)	○	○	○	○	○	841
VDM (Viking Data Manager)	○	○	○	○	○	842
VFM (Viking Forms Manager)	○	○	○	○	○	359
VISUAL/menu	○	○	○	○	○	359
VOILA!	○	○	○	○	○	1402
VRTARY (Virtual Array Access Routines for RT-11 and TSX-PLUS)	○	○	○	○	○	360
VT152.TEC	○	○	○	○	○	1402
WATBOL-11 Compiler	○	○	○	○	○	943
WATFOR-77 Compiler	○	○	○	○	○	944
Wittenberg University Utility Package	○	○	○	○	○	360
WUTIL	○	○	○	○	○	210
X-TOOLS	○	○	○	○	○	361
XENIX® Operating System	○	○	○	○	○	1157
XFORM	○	○	○	○	○	362
XREF	○	○	○	○	○	605
ZIPSORT-11	○	○	○	○	○	210
ZORT	○	○	○	○	○	606
Project management						
Action List	○	○	○	○	○	960
APPGEN Job Cost	○	○	○	○	○	37
APPGEN Professional Time Reporting	○	○	○	○	○	616
ASA PMS (Project Management System)	○	○	○	○	○	960
Chronometrix	○	○	○	○	○	962
Concept Works Order Control — Operations	○	○	○	○	○	998
Constructimate	○	○	○	○	○	215
Contractor Cost Accounting System	○	○	○	○	○	216
CPM (Critical Path Method)	○	○	○	○	○	217
Date*Book	○	○	○	○	○	1083
DDM-11 (Due-Date Monitor)	○	○	○	○	○	963
Drawing Register	○	○	○	○	○	682
Employment Agency	○	○	○	○	○	1170
EPOS (Engineering- and Project Management-Oriented Support System)	○	○	○	○	○	810
Estimating System	○	○	○	○	○	218
EVANAC — Project Accounting System	○	○	○	○	○	186
Flexware Job Costing	○	○	○	○	○	631

	P/OS	AS/TS	RSX	RT-11	ULTRIX-11	Page
FMS (Facility Management System)	○	●	●	○	○	551
H-MAKE	○	○	○	○	●	1007
Hammer	○	○	○	○	○	499
InterUpt (ISM Universal Programming Tool)	○	○	○	○	○	287
Job Cost	○	●	●	○	○	221
Job Cost Accounting	○	○	○	○	○	818
Job Costing	○	○	○	○	●	94
Job Costing	○	●	○	○	○	222
Management Case Studies	○	●	○	○	○	965
MAPPs (Management and Project Planning System)	○	○	○	○	○	966
Paris	○	○	○	○	●	517
PCM (Project Cost Model)	○	○	○	○	○	968
PEPS (Production Estimating and Planning System)	○	○	○	○	○	1031
Phoenix-Pro™	●	○	○	○	○	968
Pioneer COMMAND Production Control Module	○	○	○	○	○	1035
PIPCOS	○	○	○	○	○	517
Pipeline Layout #6000	○	○	○	○	○	518
PMM/MBS Job Cost System	○	○	○	○	○	969
PREMINI	○	○	○	○	○	970
ProBiz™ Job Costing/Work in Process	○	○	○	○	○	1039
PRODAT (Project Day Computation)	○	○	○	○	○	223
Project Cost Accounting System	○	○	○	○	○	519
RT-DBASE	○	○	○	○	○	593
Series DEC	●	○	○	○	○	224
TIMETRACK: Project Time Accounting	○	○	○	○	○	1177
Tool Inventory	○	○	○	○	○	1060
TOPMAN (Total Planning and Management), Version 2.0	○	○	○	○	○	974
TSI JobCost	○	○	○	○	○	225
VUE	○	○	○	○	○	975
WIP (Work In Progress)	○	○	○	○	○	147
Work Order System	○	○	○	○	○	1191

Property maintenance

ABC/Equipment Data and Repair History System	○	○	○	○	○	1246
ABC/MM (Maintenance Management System)	○	○	○	○	○	548
ABC/PM Preventive Maintenance System	○	○	○	○	○	548
BMOSS (Building Maintenance Operation Service System)	○	○	○	○	○	1181
CMMS (Comprehensive Maintenance Management System)	○	○	○	○	○	550
EMIS (Equipment Management Information System)	○	○	○	○	○	1420
Equipment Cost	○	○	○	○	○	218
FLEET™	○	○	○	○	○	1420
Flight Watch	○	○	○	○	○	1421
FMS (Facility Management System)	○	○	○	○	○	551
MAINSY-IMPRS Preventive Maintenance System	○	○	○	○	○	552
Maintenance Management — System 600	○	○	○	○	○	553
Oil Burner Service/Inventory	○	○	○	○	○	1252
PMIS (Plant Management Information System)	○	○	○	○	○	553
PMS (Preventive Maintenance Scheduling System)	○	○	○	○	○	1036
PMST (Preventive Maintenance Scheduling and Tracking System)	○	○	○	○	○	554
QMS PROGRAMS® Computer Software/Instrument Calibration	○	○	○	○	○	1043
Rental Service System	○	○	○	○	○	1253
ROMIS™ (Rotating Machinery Information System) Large Host	○	○	○	○	○	555
Trouble Ticket Reporting System	○	○	○	○	○	1188
Vehicle Cost and PM	○	○	○	○	○	1256
Work Order Record System	●	○	○	○	○	1257

Property management

Accounting, Integrated	○	○	○	○	○	11
ADAM (Automated Dairy and Management)	○	○	○	○	○	150

1578 Keyword Cross-Reference Guide

	P/OS	R/S	R/SX	RT-11	ULTRIX-11	Page
AESOP (Aggregate Exception System for Mortgage Portfolios)	o	●	o	o	o	1194
Apartment Management System	o	o	●	o	o	1194
C-11 Property Manager Tracking System	o	o	●	o	o	1195
CHRIS (CISCO Hotel and Resort Information Systems)	o	o	●	o	o	1247
Commercial Property Management	o	o	●	o	o	1195
Commercial/Residential Property Management	o	o	●	o	o	1196
FCI Building and Zoning System	o	o	●	o	o	655
Fixed Asset Accounting	o	o	o	o	o	69
Fixed Assets and Depreciation	o	o	●	o	o	72
FMS (Facility Management System)	o	o	●	o	o	551
Housing Authority — Section 8	o	o	●	o	o	1196
Housing Authority Tenant Accounting	o	o	●	o	o	1197
IND/DEV-11 (Industrial Development Management System)	o	o	o	o	o	1090
Innkeepers Management System	o	o	●	o	o	1250
Laundry Module: Leadership Series™	o	o	o	o	o	764
LIBERTY™ Agency Management System	o	o	●	o	o	849
Maintenance Management — System 600	o	o	●	o	o	553
NFC Property Management	o	o	●	o	o	103
PMS (Property Management System)	o	o	o	o	o	1198
Property and Casualty Insurance System	o	o	●	o	o	849
Property Management (Rental)	o	o	o	o	o	1199
Property Management System	o	o	o	o	o	1199
Real Estate Information System	o	o	●	o	o	1200
Residential Property Management	o	o	●	o	o	1202
Resort Property Management	o	o	o	o	o	1253
RESPAC (Real Estate Sales Data Retrieval Package)	o	o	●	o	o	1202
Tax-11	o	o	●	o	o	666
TSI P-M (Project Management)	o	o	●	o	o	1203
UDS PMAS (Property Management Accounting System)	o	o	o	o	o	1203
UDS Real Estate Sales Analysis	o	o	o	o	o	1204
UDS REAS (Real Estate Accounting System)	o	o	o	o	o	1204
Public utilities						
RECAP	o	o	●	o	o	665
TMS-4 (TANO Macro System, Version 4)	o	o	●	o	o	427
Publishing						
Circulation Management	o	o	●	o	o	1065
Cybergraphic Integrated Software	o	o	●	o	o	1067
Documentor/F	o	o	●	o	o	1373
Dovetail Journal Publisher	o	o	●	o	o	1067
EPS (Electronic Publishing System)	o	o	o	o	o	811
INFOTEX	o	o	●	o	o	1381
RUNREF	o	o	o	o	o	1392
TPINS (Times Publishing Interactive Newsprint Inventory System) ..	o	o	●	o	o	1073
Vista Publishing and Distribution System	o	o	●	o	o	1073
Purchasing						
Accountant II Inventory Control System	o	o	●	o	o	367
Accountant II Purchasing System	o	o	●	o	o	368
Accounts Payable	o	o	●	o	o	12
AIM Benchmark — Suite I	o	o	o	o	o	179
APPGEN Accountants Client Write-Up	o	o	o	o	o	34
APPGEN Inventory/Order Entry	o	o	o	o	o	369
C-11 Purchase Order Processing	o	o	●	o	o	45
CAS (Comprehensive Accounting System)	o	o	●	o	o	45
CAS.7 (Purchase Order)	o	o	●	o	o	50
CFMS (Computerized Forms Management System)	o	o	o	o	o	1081
CHIPS	o	o	●	o	o	371

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Clothier	○	○	○	●	○	1408
Concept Purchase Order Control	○	●	○	○	○	997
ConTrol — Materials Management Information System	○	○	○	○	○	748
CSI Accounts Payable	○	○	●	○	○	56
DACMS (Distribution and Cash Management System)	○	●	●	○	○	372
Daymark Wholesale Distribution System	○	●	●	●	○	372
DDP PCSF (Purchasing Control System)	○	●	●	●	○	61
Distribution — Wholesale and Retail	○	●	○	○	○	375
DOVETAIL JOM (Job-Oriented Manufacturer)	○	●	○	○	○	1001
DOVETAIL MRP (Materials Requirement Planner)	○	○	○	○	○	1001
DTRO Inventory Management System	○	●	●	○	○	378
DTRO Purchasing System	○	●	●	○	○	380
FACS — Patronage Accounting	○	○	●	○	○	628
FACTS V Systems of Tire Control	○	○	○	●	○	628
FIFO: FIFO Inventory	○	●	●	●	○	68
Flexware Purchasing	○	○	○	○	○	78
GBMS (General Business Management System)	○	○	○	○	○	815
Group Purchasing System	○	○	○	○	○	754
H-BUY	○	○	○	○	●	1006
H-MRP	○	○	○	○	●	1008
Inventory Control	○	○	○	○	●	388
IOI: Order Entry	○	●	●	●	○	93
LEAP (Library Electronic Acquisition Program)	○	●	○	○	○	955
MBS ASR (Manus Business Systems Automatic Stock Replenishment)	○	○	○	○	○	389
MBS PO (Manus Business Systems Purchase Order Management)	○	○	○	○	○	391
Milltech: Melt Management System	○	○	○	○	○	1021
MMS (Materials Management System)	○	○	○	○	○	1022
MUNIS/PLUS	○	○	○	○	●	664
Papersoft	○	●	○	○	○	398
Pioneer COMMAND Purchase Order Processing Module	○	○	○	○	○	402
PMIS (Plant Management Information System)	○	○	○	○	○	553
P/O (Purchase Order and Receiving), MCBA, Inc.	○	○	○	○	○	1037
Point of Sale	○	○	○	○	○	1411
PRO-IV Purchase Order	○	○	○	○	○	126
ProBiz™ Purchasing Management	○	○	○	○	○	130
Purchase and Supply Control	○	○	○	○	○	406
Purchase Order Accounting	○	○	○	○	○	132
Purchase Order and Receiving	○	○	○	○	○	1040
Purchase Order Processing	○	○	○	○	○	1040
Purchase Order System	○	○	○	○	○	223
SIMS (Supplies Inventory Management System)	○	○	○	○	○	1107
SPC (Standard Product Costing), MCBA, Inc.	○	○	○	○	○	1056
TEC Manufacturing System	○	○	○	○	○	1059
Timeline Accounts Payable	○	○	○	○	○	141
TOLAS	○	○	○	○	○	410
Warehousing/Order Entry/Inventory/Purchasing	○	○	○	○	○	412
Welding Distributor System — TIMS BASIC +, 2 + 2, and Super +	○	○	○	○	○	414
Quality control						
6600 Plant Management System	○	○	○	○	○	978
ADLIB	○	○	○	○	○	981
Enforcer I™	○	○	○	○	○	278
H-BUY	○	○	○	○	○	1006
Hospital Laboratory System	○	○	○	○	○	758
M-Net™ (Manufacturing Network)	○	○	○	○	○	1017
Milltech: Melt Management System	○	○	○	○	○	1021
PFS	○	○	○	○	○	156

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
QMS PROGRAMS® Computer Software/Cost of Quality and Material Review	○	○	●	○	○	1041
QMS PROGRAMS® Computer Software/Customer Complaint and Field-Failure Analysis	○	○	●	○	○	1041
QMS PROGRAMS® Computer Software/Defect Analysis	○	○	●	○	○	1042
QMS PROGRAMS® Computer Software/Environment	○	○	○	○	○	1042
QMS PROGRAMS® Computer Software/Finished Goods Release	○	○	●	○	○	1043
QMS PROGRAMS® Computer Software/Instrument Calibration	○	○	●	○	○	1043
QMS PROGRAMS® Computer Software/Logistics	○	○	○	○	○	1044
QMS PROGRAMS® Computer Software/Materials	○	○	●	○	○	1044
QMS PROGRAMS® Computer Software/Optimum Inspection Strategies	○	○	●	○	○	1045
QMS PROGRAMS® Computer Software/Process Capability Studies	○	○	●	○	○	1045
QMS PROGRAMS® Computer Software/Product Shelf Life and Stability	○	○	●	○	○	1046
QMS PROGRAMS® Computer Software/Statistical Process Control	○	○	●	○	○	1046
QMS PROGRAMS® Computer Software/Supplier Ratings	○	○	●	○	○	1047
QMS PROGRAMS® Computer Software/What-If Studies	○	○	●	○	○	1047
REAP™ (Reliability Effectiveness Analysis Program)	○	○	○	○	○	523
RPM	○	●	○	○	○	198
RS/1™	●	○	○	○	○	1224
S245/S545 Quality Assurance Software	○	○	○	○	○	528
S531A/S631A ABACOS II	○	○	○	○	○	1224
Salerno/SPM+ (Statistical Process Monitoring)	○	○	○	○	○	1050
SPSS-11™	○	●	●	○	○	839
TESTWARE	○	●	●	○	○	351
Query facilities						
APPGEN Applications Generator	○	○	○	○	○	259
AVID	●	○	○	○	○	433
BASE/OE (Base Operating Environment)	●	○	○	○	○	800
BASIX	○	○	○	○	○	801
BOS/AutoIndex	○	○	○	○	○	1079
C-11 Accounts Payable	●	○	○	○	○	40
C-11 General Ledger	●	○	○	○	○	41
C-11 Human Resource Management	●	○	○	○	○	1169
C-11 Inventory I	●	○	○	○	○	43
C-11 Payroll	○	○	○	○	○	44
C-11 Purchase Order Processing	●	○	○	○	○	45
CLASS — IMPRS	○	○	○	○	○	439
COLOR (Color Consultants Information System)	○	○	○	○	○	1247
Conflict of Interest	○	○	○	○	○	946
D™	○	○	○	○	○	802
DATA BASE: A Rudimentary Data Base Generator	○	○	○	○	○	803
DATATRIEVE-11	○	○	○	○	○	805
DATATRIEVE-11/IAS	○	○	○	○	○	806
DATMAN (BASIC Data Manipulation Package)	○	○	○	○	○	807
DBSMNG: Small Data Base Management Package Binary Kit	○	○	○	○	○	565
DocuSearch Full-Text Retrieval System	○	○	○	○	○	1374
E Z Chart	○	○	○	○	○	684
Evets Accounting Systems	○	○	○	○	○	64
Executive Information and Action Screen	○	○	○	○	○	963
EZ Chart	○	○	○	○	○	685
FMS-11/IAS	○	○	○	○	○	812
FMS-11/RSTS	○	○	○	○	○	813
FMS-11/RSX	○	○	○	○	○	1377
FMS-11/RT-11	○	○	○	○	○	1378
GCIS (Group Corporate Information System)	●	○	○	○	○	815

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
IMPRS	○	●	○	○	○	816
LABPlus (Laboratory Information System)	○	○	●	○	○	764
LEADS: An Interactive Data Base Management System for Education	○	●	○	○	○	448
LEDGR	○	○	○	●	○	820
MATCHMASTER™	○	○	●	○	○	581
MDBS III	○	○	○	○	○	298
Micro/RSTS DATATRIEVE-11	○	●	○	○	○	822
Micro/RSX DATATRIEVE-11	○	○	●	○	○	823
Micro/RSX FMS-11 (Forms Management System)	○	○	○	○	○	824
Milldata	○	●	●	○	○	825
MIMER: The Software Machine	○	○	●	○	○	825
Miracle Viewdata	○	●	●	○	○	826
Mistress "Plus"	○	○	○	○	○	826
Mistress Relational Database Management System	○	○	○	○	○	827
PRO/DATATRIEVE	●	○	○	○	○	833
QUEST, Standard MUMPS Teaching Program, and DOC	○	○	○	○	○	454
Real Estate Information System	●	●	●	●	○	1200
RESPAC (Real Estate Sales Data Retrieval Package)	○	○	○	○	○	1202
Retrieval	○	○	○	○	○	837
SEED DBMS (Data Base Management System)	○	○	●	○	○	838
SOLUTIONS DECK Design	○	●	○	○	○	340
SOLUTIONS DECK Dictionary	○	●	○	○	○	599
SOLUTIONS DECK Transaction	○	●	○	○	○	344
Timeline Accounts Payable	○	●	○	○	○	141
TIP (Terminal Interface Program)	○	○	○	○	○	1400
UTIANA-IMPRS Utility Analysis System	○	●	●	○	○	1189
VF	○	○	○	○	●	1110
Viewmaster — Microfilm Indexing and Retrieval System	○	○	○	●	○	842
Zetar	○	○	○	○	●	843
Real estate						
Accounting, Integrated	○	○	○	○	●	11
Builder (Homebuilders System)	○	○	○	○	○	214
C-11 Mortgage Banking I	●	○	○	○	○	620
C-11 Mortgage Banking II	●	○	○	○	○	946
REAS (Real Estate Appraisal System)	○	○	○	○	●	664
Tax-11	○	●	○	○	○	666
Title System	○	○	○	○	○	666
Real time						
AADC (Advanced Automated Data Collection)	○	●	●	●	○	979
ABCON (Automated Batch Control)	○	○	○	○	○	980
AIM Batch (Automated Industrial Monitoring)	○	○	○	○	○	982
BOCS (Box Office Computer System)	○	○	●	○	○	163
C EXECUTIVE, Release 2.0	○	○	○	○	○	1115
CORAL 66	○	○	●	○	○	874
Csharp Realtime Toolkit	○	○	○	○	○	271
CTS-300	○	○	○	○	○	1117
DFWFT (Discrete Fast Walsh-Fourier Transform) Subroutine	○	○	○	○	○	236
Fast Fourier Transform Routine	○	○	○	○	○	880
FINCON (Financial Control System)	○	●	○	○	○	1004
GAM (Graphic Access Method)	○	○	○	○	○	687
GDL (Graphic Display Library)	○	○	○	○	○	688
IAS (Interactive Application System)	○	○	○	○	○	1121
IGOR 1 (Interactive Graphic Operating Resource)	○	○	○	○	○	697
ISL (Interactive Simulation Language)	○	○	○	○	○	507
Laboratory Peripheral Device Handlers for the LSI-11	○	○	○	○	○	579
MicroPower/Pascal-RT	○	○	○	○	○	316

1582 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
MOS-11 (Memory-Only System)	o	o	●	o	o	1127
PEAK-11/M	o	o	●	o	o	1222
PMCS (Process Monitoring and Control System)	o	o	●	o	o	1035
QBLIB (CAMAC Subroutine Library)	o	o	●	●	o	1222
QMS PROGRAMS® Computer Software/Defect Analysis	o	o	●	●	o	1042
QMS PROGRAMS® Computer Software/Finished Goods Release	o	o	●	o	o	1043
QMS PROGRAMS® Computer Software/Materials	o	o	●	o	o	1044
QMS PROGRAMS® Computer Software/Process Capability Studies	o	o	●	o	o	1045
QMS PROGRAMS® Computer Software/Statistical Process Control	o	o	●	o	o	1046
QMS PROGRAMS® Computer Software/Supplier Ratings	o	o	●	o	o	1047
RCS-7	o	o	●	o	o	1048
Real-Aid	o	o	●	o	o	1049
Real-Time Interface Support for the Nicolet Explorer by the RS2232	●	o	o	o	o	718
RMS-11 FORTRAN-Callable Subroutines	o	o	●	o	o	591
RSX-11M-PLUS	o	o	●	o	o	1140
RSX-11M Real-Time Operating System	o	o	●	o	o	1140
RSX-11M/FORTRAN Enhancement Package for MINC	o	o	●	o	o	1141
RSX-11M/FORTRAN Real-Time Package for MINC	o	o	●	o	o	1142
RSX-11/PROVUE	o	o	●	o	o	722
RSX-11S Real-Time Operating System	o	o	●	o	o	1142
RSX MDE/T-11 (Microcomputer Development Environment)	o	o	●	o	o	333
RT-11 MDE/T-11 (Microcomputer Development Environment)	o	o	●	o	o	334
RT-11 Single-User Operating System	o	o	●	o	o	1143
RT-11/FORTRAN Real-Time Package for MINC (FRP)	o	o	●	o	o	1145
RTMASCOT	o	o	●	o	o	1146
SATT: Real-Time Operating System	o	o	●	o	o	1147
SCAN (Single-Channel Analyzer)	o	o	●	o	o	337
SETCON: Process Control Software for Industrial Processes	o	o	●	o	o	1053
Shop Floor Data Collection	o	o	●	o	o	1054
SIN-DAS (Single-User Data Acquisition System)	o	o	●	o	o	251
Single-, Double-, Triple-Precision ASCII to Decimal/Decimal to ASCII	o	o	●	o	o	251
SPM-11M-PLUS (Software Performance Monitor)	o	o	●	o	o	1149
SPM-11M (Software Performance Monitor)	o	o	●	o	o	1150
TELEVENT/TELSET/TELDAX: Telemetry Acquisition and Reduction	o	o	●	o	o	541
UNIX* MASCOT	o	o	●	o	o	1355
User Command Linkage-Plus for the Professional 300 Series	o	o	●	o	o	358
USX51 8051 Operating System	o	o	●	o	o	1156
USX86 8086 Operating System	o	o	●	o	o	1156
USX96 8096 Operating System	o	o	●	o	o	1156
VIOS (Video Input/Output and Processing Software)	o	o	●	o	o	254
Recruiting						
ARCHON: ADMISS	o	●	o	o	o	430
ARCHON: ADMS (Association Data Management System)	o	●	o	o	o	797
CLASS — Education Admission System	o	●	o	o	o	436
CLASS — Education Personnel System	o	●	o	o	o	438
Membership	o	●	o	o	o	967
Permanent Placement Personnel System	o	●	o	o	o	1173
Report writer						
1040 Tax System	o	o	●	o	o	610
ABC (Automated Bank Control System)	o	o	●	o	o	612
ABLE® Client Writeup System	o	●	o	o	o	8
Accountant II General Ledger System	o	o	●	o	o	10
Accounts Payable	o	●	o	o	o	18
ADE/RSTS: Information Management for Office Professionals	o	●	o	o	o	1160
ADR/DATA™	●	o	o	o	o	796
APPGEN Accountants Client Write-Up	o	o	o	o	o	34
ARCHON: FUND-AL	o	●	o	o	o	797

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
Automated Voucher Payment System	0	0	0	0	●	735
AUTOPRO (Automatic Programming)	0	●	0	0	0	799
BARCS	0	0	0	0	0	1180
BASIX	0	0	●	0	0	801
BOS/AutoClerk	0	0	0	0	0	261
C-11 Accounts Payable	●	●	●	●	0	40
C-11 Fixed Assets	0	0	0	0	●	1195
C-11 General Ledger	●	●	●	●	0	41
C-11 Hospital Resource Management	●	0	●	●	0	738
C-11 Human Resource Management	●	●	●	●	0	1169
C-11 Integrated Accounting Package	0	0	●	●	0	42
C-11 Inventory I	●	●	●	●	0	43
C-11 Materials Management	●	●	●	●	0	989
C-11 Mortgage Banking I	●	●	●	●	0	620
C-11 Property Manager Tracking System	0	0	0	0	●	1195
C-11 Purchase Order Processing	●	●	●	●	0	45
C-11 Report Writer	0	0	●	0	0	620
C-11 Sales Order Processing	●	●	●	●	0	1230
CARS (Computer Audit Retrieval System)	0	●	●	●	0	183
CAS.1 (General Ledger)	0	●	0	0	0	46
Client Write-Up	0	●	●	0	0	52
CMIS (Mental Health Management Information System)	0	0	0	●	0	745
COMPU-CHART — Medical Records Program for Long-Term-Care Facilities	0	●	0	0	0	747
COMPU-TRIEVE — Report Writer and Data Manager	0	●	0	0	0	747
Country Club Golf Handicapping System	0	●	0	0	0	166
DAIRY-MAN Dairy Herd Management System	0	●	0	0	0	150
Data Base Management Package	0	0	0	●	0	803
Data Base Management Package, Binary Kit Only, for the Professional 300	0	0	0	●	0	803
Data Base Management Package, Source Only, for the Professional 300	0	0	0	●	0	804
DATATRIEVE-11	0	●	●	0	0	805
DATATRIEVE-11/IAS	0	0	0	0	0	806
DBSMNG: Small Data Base Management Package Binary Kit	0	0	0	●	0	565
DECtap Manufacturing System	0	0	0	0	0	1000
DEEP (Data Entry and Editing Package)	0	●	●	●	0	1372
DMIS (Doctors' Medical Information System)	0	0	0	0	0	751
Due-Date Monitoring	0	0	0	●	0	64
European MINC Package #2 — Lab Management	0	0	0	0	●	753
F*I*R*E Report Writer	0	0	0	0	●	812
FACS — Patronage Accounting	0	●	0	0	0	628
Fixed Asset Depreciation	0	●	0	0	0	70
Flexware Accounts Receivable	0	0	0	0	0	74
FORMATIX	0	●	●	0	0	814
FSG (Financial Statement Generator)	0	0	●	●	0	79
General Ledger	0	●	0	0	0	82
General Ledger and Financial Reporting	●	●	●	0	0	85
General Ledger, Budgeting, and Checkwriter	0	0	0	0	0	635
Grade Book	0	●	0	0	0	445
IRIS-MINI	0	●	●	0	0	577
Job Cost	0	●	●	0	0	221
Job Cost Accounting	0	0	0	0	0	818
Legal Time and Billing System	0	●	0	0	0	949
MAPPS (Management and Project Planning System)	0	0	●	0	0	966
MDBS III	0	0	0	0	0	298
MDX	0	0	0	0	0	767
MEDREP — Systems for Preparation of Medicaid/Medicare Reports ..	0	●	0	0	0	772

1584 Keyword Cross-Reference Guide

	P/Os	RSTS	RSX	RT-11	ULTRIX-11	Page
Membership	0	●	0	0	0	967
Micro/RSTS DATATRIEVE-11	0	0	0	0	0	822
Micro/RSX DATATRIEVE-11	0	0	●	0	0	823
Milldata	0	●	●	●	0	825
Mistress "Plus"	0	0	0	0	0	826
Mistress/32	0	0	0	0	0	828
MJA™ Accounts Payable for the PRO 350	●	0	0	0	0	97
MJA™ Order Entry/Inventory	●	0	0	0	0	99
MJA™ Payroll and Personnel	●	0	0	0	0	100
Money Orders System	0	0	0	●	0	639
MYCRO/11 Process Management System	0	0	●	0	0	1024
Patient Management System	0	0	0	0	0	779
Payroll System	0	0	●	●	0	1172
POMS (Professional Office Management System)	0	●	●	0	0	951
PRO-IV General Ledger with Financial Report Writer	●	●	●	0	0	125
PRO/DATATRIEVE	●	0	0	0	0	833
PROOF: A Proofreading Program/Spelling Checker	0	0	0	●	0	1386
PTB (Professional Time and Billing)	0	●	0	0	0	131
QUILL	0	0	0	0	0	835
RDM™ (Responsive Data Manager)	●	0	●	0	0	835
Reliant	0	0	0	0	●	836
REPGEN (Report Generator)	0	●	0	0	0	1104
Report Writer	0	●	●	●	0	133
Reporter	0	0	●	0	0	134
RSX-11M-PLUS System Accounting Reports with DATATRIEVE	0	0	●	0	0	200
R/W (Report Writer), MCBA, Inc.	0	●	0	●	0	1393
Sales Analysis	0	0	0	0	●	1241
SB-5 (System Builders-5)	0	●	●	0	0	337
SCORE	0	●	0	0	0	460
Scribe Subscription and Merchandise Fulfillment System	0	0	0	0	0	1071
SOLUTIONS DECK Report Writer	0	●	0	0	0	343
SPM-11M-PLUS (Software Performance Monitor)	0	0	●	0	0	1149
SPM-11M (Software Performance Monitor)	0	0	●	0	0	1150
SR/SE II (Survey of Reading/Study Efficiency)	0	●	0	0	0	462
Suspense Ledgers	0	0	0	0	0	137
Telephone Accounting and Billing System	0	0	0	●	0	1187
Timeline General Ledger and Financial Reporting	0	●	0	0	0	143
TIP (Tankage Inventory and Yields Programs)	0	●	●	●	0	426
TOPMAN (Total Planning and Management), Version 2.0	0	0	●	0	0	974
TSH/CRIS — Credit Insurance Administration	0	0	0	0	0	850
TSH/Ordinary Insurance Administration	0	0	0	0	0	850
Utility-11	0	●	0	●	0	1189
VMIS (Visiting Nurse Home Health Management Information System)	0	0	0	●	0	792
VOILA!	0	●	●	●	0	1402
WordMARC Composer™	●	0	0	0	0	1405
Research						
BDARE: Dynamic-System Simulation in BASIC	0	●	●	●	0	469
CAIRS Medical Librarian	●	●	●	●	0	739
Csharp Realtime Toolkit	0	0	0	0	0	271
DESCTOP (Direct Executing Scientific Computation and Operating Package)	0	0	0	0	●	488
DocuSearch Full-Text Retrieval System	0	●	0	0	0	1374
MCSIM (Monte Carlo Simulation)	0	0	●	●	0	511
MOSFIT (MOS Transistor Model Parameter Extraction Package)	0	0	0	0	0	512
NDTRAN2	0	●	0	0	0	513
REF-11™	●	0	0	●	0	955

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
RKLN (Linear System Simulation: Runge-Kutta)	○	○	●	●	○	526
SPSS/PRO™	●	○	○	○	○	840
SSP-11 (Scientific Subroutine Package)	○	○	○	●	○	535
SVD (Singular-Value Decomposition)	○	○	○	●	○	540
Retail						
Automated Collection Management	○	○	○	○	○	1408
Clothier	○	○	○	○	●	1408
Credit Authorization	○	○	○	○	○	1408
Decision Tree	○	○	○	○	○	626
Distribution — Wholesale and Retail	○	○	○	○	○	375
Distribution Management System	○	○	○	○	○	375
GENESYS	○	○	○	○	○	635
ICAS 1123-Plus (Inventory Control Accounting System)	○	○	○	○	○	1409
IN-TOUCH™	○	○	○	○	○	1409
InteRx™	○	○	○	○	○	760
Inventory Control	○	○	○	○	○	387
MAILHOUSE™	○	○	○	○	○	1410
Order Entry and Invoicing	○	○	○	○	○	394
Performance Manager	○	○	○	○	○	642
Retail Furniture System	○	○	○	○	○	1412
Shelf	○	○	○	○	○	1413
Specialty Item and Furniture Store System	○	○	○	○	○	1413
SpiriTrak™	○	○	○	○	○	1413
Sporty	○	○	○	○	○	1414
TABS (Total Application for Building Suppliers)	○	○	○	○	○	224
TECHSCORE	○	○	○	○	○	650
VCC (The Video Outlet Control Center)	○	○	○	○	○	1415
Warehousing Systems	○	○	○	○	○	412
Robotics						
AGVS and ASRS Flexible Manufacturing Systems	○	○	○	○	○	981
CRAFT (Copperweld Robotics ASCII Format Translator)	○	○	○	○	○	564
HOST-AGV (Host-Automated Guided Vehicles)	○	○	○	○	○	1010
PENQUIN™	○	○	○	○	○	399
Zip-Pick™ Warehouse Automation System	○	○	○	○	○	419
Sales analysis						
ACCDIBSSA (Accountant DIBS Sales Analysis)	○	○	○	○	○	366
Accounts Receivable and Statement Generation	○	○	○	○	○	27
Accounts Receivable/Billing	○	○	○	○	○	28
Apparel Master™	○	○	○	○	○	369
C-11 Integrated Accounting Package	○	○	○	○	○	42
C-11 Sales Order Processing	○	○	○	○	○	1230
CAS (Comprehensive Accounting System)	○	○	○	○	○	45
CAS.3 (Accounts Receivable)	○	○	○	○	○	48
CAS.8 (Sales Analysis)	○	○	○	○	○	51
Clientrac™	○	○	○	○	○	479
COLTS (Computerized On-Line Transportation System)	○	○	○	○	○	1418
Complete Accounting Package	○	○	○	○	○	54
Customer Order Processing	○	○	○	○	○	371
DDP OEIF (Order Entry/Invoicing)	○	○	○	○	○	58
DFI/FMS (Dealer Finance and Insurance/Forms Management System)	○	○	○	○	○	1419
Distribution Management System	○	○	○	○	○	375
Dovetail Journal Publisher	○	○	○	○	○	1067
DOVETAIL Wholesale Distributor	○	○	○	○	○	376
DTRO Forecasting System	○	○	○	○	○	1233
Enterprise Distribution	○	○	○	○	○	381

1586 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
ETAKE 2 (Estimating, Takeoff, and Pricing System)	o	o	●	o	o	219
FACS — Accounts Receivable/Sales Analysis	o	●	o	o	o	65
Flexware Order Processing	o	o	o	o	o	76
Flexware Sales Analysis	o	o	o	o	o	1234
HIMS (Hospitality Information Management System)	o	●	o	o	o	1249
Innkeepers Management System	o	o	●	o	o	1250
Insurance Agency Package	o	o	o	●	o	848
Insurance Business System™	o	●	o	o	o	848
Job Shop Management	o	o	o	●	o	1251
Marketa®	o	o	o	o	●	1236
MBS SA (Manus Business Systems Sales Analysis)	o	●	o	●	o	1237
Medical Billing and Accounts Receivable	o	o	o	o	o	768
Multiuser Digital Accounting System	o	o	●	o	o	100
Order Entry and Inventory	o	●	●	●	o	104
Order Entry and Invoicing	o	●	●	o	o	394
Order Entry/Invoicing	o	o	●	o	o	395
Order Processing for Mailing List Rental	o	o	o	●	o	1238
Pack	o	●	●	●	o	830
Perspective/700 Sales Analysis	o	●	o	o	o	1239
PFS	o	o	o	o	o	156
Pioneer COMMAND Sales Order Processing Module	o	●	o	o	o	403
PM32 Order Processing/Inventory/Sales Analysis	o	●	o	o	o	403
PRO-IV Sales Analysis	●	●	●	o	o	1239
PROS (Prospect, Letter, and Sales Facility)	o	●	o	o	o	1240
REAS (Real Estate Appraisal System)	o	o	o	o	●	664
RESPAC (Real Estate Sales Data Retrieval Package)	o	●	o	o	o	1202
S/A (Sales Analysis)	o	●	o	o	o	1241
Sales Analysis	o	●	o	●	o	407
Sales Analysis	o	o	o	o	●	1241
Sales Lead Analysis	o	●	o	o	o	1242
Sales Order Processing	o	o	o	o	o	1051
Sales Prospect Data Base	o	●	o	o	o	1243
Soft Drink Bottler's Package	o	●	●	●	o	408
SpiriTrak™	o	o	o	o	o	1413
Sporty	o	o	o	●	o	1414
TAPS (Transportation Accounting Packages)	o	●	o	o	o	1423
TBS Order Entry System with Inventory Control, Billing, and Sales Analysis	o	●	●	●	o	410
Timeline Accounts Receivable	o	●	o	o	o	141
Turnkey Data	o	●	●	●	o	146
UDS Real Estate Sales Analysis	o	o	o	●	o	1204
Sales and marketing						
Broadcast Management	o	●	●	o	o	1065
COLOR (Color Consultants Information System)	o	o	o	●	o	1247
Insurance Agency (Casualty)	o	●	o	o	o	847
LIBERTY™ Agency Management System	o	●	o	o	o	849
MAXX D Accounting and Management System for the Distribution Industry	o	●	o	o	o	388
MDS-4	o	●	o	o	o	392
Money Orders System	o	o	o	●	o	639
Multiplan® Electronic Worksheet	o	o	o	o	●	639
PCO (Pest Control Operators Management System)	o	o	●	o	o	1252
ProBiz™ Order Processing and Inventory Control	o	o	●	o	o	404
Project Delta, Sections G and H: Business and Data Processing	o	●	o	o	o	647
QUOTE: Manufacturing Cost Estimating	o	o	●	o	o	1048
Timeshare Contract Management System	o	●	o	o	o	1255

Scheduling

ABC/MM (Maintenance Management System)	○ ● ● ○ ○	548
ABC/PM Preventive Maintenance System	○ ● ● ○ ○	548
Academic Management Systems	○ ● ○ ○ ○	430
Accountant's Time and Billing System	○ ○ ○ ● ○	10
Action List	○ ● ● ○ ○	960
ADE/RSX	○ ○ ● ○ ○	1160
AGGDISS	○ ● ○ ○ ○	214
AIMS (Advanced Integrated Manufacturing Systems)	○ ○ ○ ○ ○	983
AISCorp. Medical Management Systems	○ ● ○ ○ ○	734
APPGEN Professional Time Reporting	○ ○ ○ ○ ○	616
APR (Automated Production Reporting) System	○ ○ ● ○ ○	422
ARCHON: STUDENT	○ ● ○ ○ ○	431
ARSAP: Resource Management and Chargeback System	○ ● ● ○ ○	179
ASA PMS (Project Management System)	○ ● ● ○ ○	960
Attendance	○ ● ○ ○ ○	432
BIGCAL: A Calendar Scheduling Program	○ ○ ● ○ ○	1078
BMOSS (Building Maintenance Operation Service System)	○ ○ ● ○ ○	1181
C-11 Materials Management	● ● ● ○ ○	989
Call Tracker	○ ● ● ○ ○	1231
CLASS — Education Registration System	○ ● ○ ○ ○	438
Client Accounting	○ ○ ○ ○ ○	52
COMADS (Computer-Aided Dispatching)	○ ○ ○ ○ ○	215
Constructimate	○ ● ● ○ ○	215
Cortex Desk Set™	● ○ ○ ○ ○	1082
Court Club Management System	○ ● ● ○ ○	1248
CPA Time and Billing	○ ● ● ○ ○	55
CPM (Critical Path Method)	○ ● ● ○ ○	217
Date*Book	○ ● ● ○ ○	1083
DDM-11 (Due-Date Monitor)	○ ○ ● ○ ○	963
DMIS (Doctors' Medical Information System)	○ ○ ○ ● ○	751
Docket/Calendar System	○ ● ● ○ ○	946
DOVETAIL MRP (Materials Requirement Planner)	○ ○ ○ ○ ○	1001
DTC (Desk Top Calendar)	○ ○ ● ○ ○	1087
Due-Date Monitoring	○ ○ ● ○ ○	64
DYNPRI	○ ● ○ ○ ○	186
Equipment Cost	○ ○ ● ○ ○	218
EQUUS-11	○ ○ ○ ○ ○	151
Flight Watch	○ ○ ○ ● ○	1421
Flock Modeling and Egg Production Forecasting	○ ● ● ○ ○	153
FMS (Fleet Management System)	○ ○ ○ ○ ○	1184
Fuel Company System	○ ● ○ ○ ○	384
Fuel Oil Accounting/Delivery Scheduling	○ ● ○ ○ ○	384
Golf League Records	○ ○ ○ ● ○	170
GTSC 306A Calendar	○ ○ ○ ○ ○	188
H-PLAN/M	○ ○ ○ ○ ●	1008
HDC + (Hospital Data Communication)	○ ○ ○ ○ ○	755
Healthcare	○ ○ ○ ● ○	756
Home Health Management	○ ○ ● ○ ○	757
Impact	○ ○ ● ○ ○	1235
Insurance Business System™	○ ● ○ ○ ○	848
ISAS (Interactive Student Accounting System)	○ ● ○ ○ ○	447
IUC (Interactive Unit Commitment)	○ ○ ● ○ ○	507
Legal Time and Accounting System	○ ● ○ ○ ○	949
MAINSY-IMPRS Preventive Maintenance System	○ ● ● ○ ○	552
Maintenance Management — System 600	○ ○ ● ○ ○	553
MAPPS (Management and Project Planning System)	○ ○ ● ○ ○	966
MDX	○ ○ ○ ○ ○	767

1588 Keyword Cross-Reference Guide

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
MediCom®	○	○	○	○	●	770
MRP (Material Requirements Planning), MCBA, Inc.	○	●	●	○	○	1024
NMI Customer Profile Package	○	○	○	○	○	1237
On-Line Registration System	○	●	○	○	○	451
PCO (Pest Control Operators Management System)	○	○	●	○	○	1252
Physician Systems	○	○	○	○	○	781
Pigeonhole	○	●	●	○	○	1422
Pioneer COMMAND Production Control Module	○	○	○	○	○	1035
PMM/MBS Job Cost System	○	○	●	○	○	969
PMS (Preventive Maintenance Scheduling System)	○	○	○	○	○	1036
PMST (Preventive Maintenance Scheduling and Tracking System) ..	○	○	○	●	○	554
POMS (Professional Office Management System)	○	○	●	○	○	951
Practice Management	○	○	○	○	○	970
PREMINI	○	○	●	○	○	970
PRODAT (Project Day Computation)	○	○	○	●	○	223
PRODSTAR-MRP	○	○	○	○	○	1039
Project Cost Accounting System	○	○	●	○	○	519
Property Management (Rental)	○	○	○	○	○	1199
Q-DATE	○	○	○	○	●	1101
QMS PROGRAMS® Computer Software/Logistics	○	○	○	○	○	1044
Rental Service System	○	○	○	○	○	1253
SCHED: Manufacturing Scheduling System	○	○	○	○	○	1052
Scheduling	○	○	○	○	○	456
School Student Accounting Package	○	○	○	○	○	460
Selector	○	○	○	○	○	1072
SFC (Shop Floor Control), MCBA, Inc.	○	○	○	○	○	1053
Shop Floor Control	○	○	○	○	○	1054
Shop Schedule and Machine Loading	○	○	○	○	○	1055
SPECS: A Menu-Control System for RT-11	○	○	○	○	○	345
Start/Stop Time Optimization — System 600	○	○	○	○	○	556
Student Administrator	○	○	○	○	○	463
Student Terminal Management System	○	○	○	○	○	464
SWAP: Modify Swapping/Shuffling Parameters	○	○	○	○	○	1151
Temporary Nursing Personnel Agency System	○	○	○	○	○	790
Time and Billing	○	○	○	○	○	973
Timeman	○	○	○	○	○	1108
TMR® (The Medical Record)	○	○	○	○	○	791
TMS/2000 Tool Management System	○	○	○	○	○	1059
Tool Inventory	○	○	○	○	○	1060
TOPMAN (Total Planning and Management), Version 2.0	○	○	○	○	○	974
Travel System 4/11	○	○	○	○	○	1256
UNIX* MASCOT	○	○	○	○	○	1355
Vehicle Cost and PM	○	○	○	○	○	1256
VET-11	○	○	○	○	○	792
VUE	○	○	○	○	○	975
WATER-MAN HNA (Hydraulic Network Analyzer)	○	○	○	○	○	157
Wayne Medical System	○	○	○	○	○	793
Scientific						
Array Processor Support Under UNIX*	○	○	○	○	○	1114
CALC: An Interactive Computer Language with Unlimited Numerical Precision	○	○	○	○	○	1208
Cephes Math Function Library	○	○	○	○	○	476
CLIN-TEAMS®	○	○	○	○	○	1210
CLIN-TEAMS®/Remote	○	○	○	○	○	743
Clini-CAL® Laboratory Information System	○	○	○	○	○	743
CONEFR.BAS (Cone Frustrum Layout)	○	○	○	○	○	482
DAREP (Differential Analyzer Replacement — Portable), DARE/11 ..	○	○	○	○	○	487

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
DESKTOP (Direct Executing Scientific Computation and Operating Package)	○	○	○	○	○	488
DFWFT (Discrete Fast Walsh-Fourier Transform) Subroutine	○	○	○	○	○	236
EPR (Electron Paramagnetic Resonance) Package	○	○	○	○	○	236
European MINC Package #7—Instruments	○	○	○	○	○	493
FOCAL RT	○	○	○	○	○	882
GAB (General Program for the Analysis of Biopotentials)	○	○	○	○	○	1214
Gamma Spectroscopy Applications Package	○	○	○	○	○	1214
GENPLT	○	○	○	○	○	689
GKS—GRAL	○	○	○	○	○	692
HP-9872 Plotting Package for Use with MINCs	○	○	○	○	○	696
I*S*P* (Interactive Signal Processor)	○	○	○	○	○	502
IDL (Interactive Data Language)	○	○	○	○	○	1216
ILS (Interactive Laboratory System) [™]	○	○	○	○	○	505
ILS/SKY	○	○	○	○	○	505
IS—LEM Word Processing System	○	○	○	○	○	1382
Laboratory Applications—11 Library	○	○	○	○	○	1217
LazerCalc	○	○	○	○	○	240
MAPSS = MAGIC (Management and Analysis of Geographic Characteristics Information)	○	○	○	○	○	700
MICRO LP	●	○	○	○	○	1020
MICRODARE	○	○	○	○	○	1217
MINC BASIC	○	○	○	○	○	910
MINI LP	○	○	○	○	○	1022
MOLDYN (A Molecular Dynamics Package)	○	○	○	○	○	242
NAG FORTRAN Library Service	○	○	○	○	○	1219
NaI Data Reduction	○	○	○	○	○	1220
Neutron Activation Analysis	○	○	○	○	○	1220
NORTON (Astronomical Ephemeris Program Package)	○	○	○	○	○	1221
OPTAN (Optical Systems, Evaluation, and Analysis)	○	○	○	○	○	516
PEAK—11/M	○	○	○	○	○	1222
PLOT50 (Vector Plotting for the LA50)	○	○	○	○	○	711
Project Delta, Section B: Statistics	○	○	○	○	○	519
PRO/Scientific Subroutine Package	●	○	○	○	○	327
PSYCHROM: A Calculating Psychrometric Properties Program	○	○	○	○	○	1222
Regression Analysis for Michaelis-Menten Kinetic Data	○	○	○	○	○	523
RS/1 [™]	●	○	○	○	○	1224
RSX—11 FOCAL	○	○	○	○	○	933
RSX—11M/FORTRAN Enhancement Package for MINC	○	○	○	○	○	1141
RSX—11M/FORTRAN Real-Time Package for MINC	○	○	○	○	○	1142
RT—11/FORTRAN Real-Time Package for MINC (FRP)	○	○	○	○	○	1145
RUNREF	○	○	○	○	○	1392
S220 CANSCAN	○	○	○	○	○	526
S235/S535 GAMMA—M	○	○	○	○	○	527
S240/S540 SPECTRAN—F	○	○	○	○	○	527
S245/S545 Quality Assurance Software	○	○	○	○	○	528
S531A/S631A ABACOS II	○	○	○	○	○	1224
S541/S641 APOGEE	○	○	○	○	○	528
S543 NAA	○	○	○	○	○	529
SDP—PLUS (Structure Determination Package)	○	○	○	○	○	1225
SIMPLEPLOT Mark 2	●	○	○	○	○	725
SIMPLEPLOT Mark 2 Section 2	●	○	○	○	○	726
SKYMNK Software Support	○	○	○	○	○	533
SPSS—11 [™]	○	○	○	○	○	839
SRPRDR (Serial Protocol Driver)	○	○	○	○	○	1348
SSP—11 (Scientific Subroutine Package)	○	○	○	○	○	535
STONE: A Program for Resolving Mossbauer Spectra	○	○	○	○	○	536
TEAMS®—TOX	○	○	○	○	○	1226

1590 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
WordMARC Author™	●	○	○	○	○	1404
WordMARC Composer™	●	○	○	○	○	1405
Security						
Access Control	○	○	○	○	●	178
AGVS and ASRS Flexible Manufacturing Systems	○	●	●	○	○	981
CONTRL	○	●	○	○	○	184
DATA-LOCK®	○	○	●	●	○	233
DECTap Manufacturing System	○	○	○	○	○	1000
DIALBACK	○	●	●	○	○	1289
Dynamic Systems Account Manager	○	○	●	○	○	185
GENLOG: Shareable Data Logging Package	○	○	○	●	○	239
InterUpt (ISM Universal Programming Tool)	○	○	○	○	○	287
LOCK	○	○	●	○	○	190
Lock-11	○	○	○	○	○	1122
LOGOUT: RSX-11 Remote Terminal Logout	○	○	●	○	○	1323
M/APS (Menu/Authorization Processor System)	○	○	●	○	○	296
MENU-11/RSTS	○	○	○	○	○	299
MJA™ Accounts Payable for the PRO 350	●	○	○	○	○	97
MJA™ Order Entry/Inventory	●	○	○	○	○	99
MONITR: A Display Program for RSTS/E	○	○	○	○	○	1127
PRO/DECnet	●	○	○	○	○	1335
RABBIT-4 Security System	○	○	●	○	○	196
RADIO-OSCAR	○	○	●	●	○	784
Receptor System 8835	○	○	○	●	○	523
RECOVER (RSX Corrupted Disk Recovery Utility)	○	○	○	●	○	590
RT-NEWUSER V2.0	○	○	○	●	○	594
SENTRY-11	○	○	○	○	○	200
Triton™ Security System	○	○	○	●	○	556
UTL	○	○	○	○	○	208
VCS (Viking Control System)	○	○	○	○	○	208
WORD-11® Encryption Option	○	○	○	○	○	1403
WRDBX Subroutine for Check Writing	○	○	○	○	○	254
Seismic modeling						
SDP (Seismic Data Processing)	○	○	○	●	○	1225
Service industries						
Electrical Contracting	○	○	○	○	○	1182
Electrical Repair and Paging	○	○	○	○	○	1183
Payroll System	○	○	○	○	○	1172
Temporary Services Personnel System	○	○	○	○	○	1176
Transportation/Airline/Airport Management Information System	○	○	○	○	○	1423
Shop floor control						
ADLIB	○	○	○	○	○	981
AIMS (Advanced Integrated Manufacturing Systems)	○	○	○	○	○	983
BASEWAY Software	○	○	○	○	○	987
Concept Capacity Planning	○	○	○	○	○	993
Concept Works Order Control — Materials	○	○	○	○	○	997
Concept Works Order Control — Operations	○	○	○	○	○	998
DNC-11 (Direct Numerical Control Package)	○	○	○	○	○	1000
FACS — Job Order System	○	○	○	○	○	383
H-MAKE	○	○	○	○	○	1007
H-MRP	○	○	○	○	○	1008
HOST-AGV (Host-Automated Guided Vehicles)	○	○	○	○	○	1010
IMCS (Interactive Manufacturing Control Systems)	○	○	○	○	○	1011
IMPCON (Inventory Management and Production Control System)	○	○	○	○	○	1012
Job Shop Management	○	○	○	○	○	1251

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Labor Performance	○	●	●	○	○	1016
M-Net™ (Manufacturing Network)	○	○	●	○	○	1017
MCS-3 (Manufacturing Control System)	○	○	○	○	○	1020
NCNET	○	○	●	●	○	1026
NUFORM Level I	○	○	●	○	○	1028
NUFORM Level II	○	○	○	○	○	1028
OMNICONROL® and OMNIPREP®	○	○	○	○	○	1029
PRODSTAR-MRP	○	○	○	○	○	1039
Real-Aid	○	○	●	○	○	1049
Real-Time Production Monitoring System	○	○	○	●	○	1049
Salerno/SPM+ (Statistical Process Monitoring)	○	○	●	○	○	1050
SCHED: Manufacturing Scheduling System	○	○	○	○	○	1052
SETCON: Process Control Software for Industrial Processes	○	○	○	○	○	1053
SFC (Shop Floor Control), MCBA, Inc.	○	●	●	●	○	1053
Shop Floor Control	○	○	●	○	○	1054
Shop Floor Control Systems	○	○	○	○	○	407
Shop Floor Data Collection	○	○	○	●	○	1054
Shop Schedule and Machine Loading	○	○	○	○	○	1055
Spider II Manufacturing Planning and Control System	○	●	○	○	○	1056
Standard Product Routing	○	●	○	○	○	1058
Tool Inventory	○	○	○	○	●	1060
UCC/CAM 100	●	○	○	○	○	1061

Signal processing

ADCON (A/D Conversions) Package for Use with ADV11-C and KVV11-C	○	○	○	●	○	228
Array Processor Support Under UNIX*	○	○	○	○	●	1114
BT-II Voice Response Peripheral	○	○	●	○	○	1271
Circuits	○	○	○	●	○	478
COMM IOP-DUP	○	○	○	○	○	1276
COMM IOP-DZ	○	○	○	○	○	1277
CTS-300 RDCP (2780/3780)	○	○	○	○	○	1279
DACON: D/A Conversions Package for Use with AAV11-C and KVV11-C	○	○	○	○	○	233
DATS	●	○	○	○	○	680
DESKTOP (Direct Executing Scientific Computation and Operating Package)	○	○	○	○	○	488
EPR (Electron Paramagnetic Resonance) Package	○	○	○	○	○	236
European MINC Package #5 — Data Analysis	○	○	○	○	○	1211
EVOKE	○	○	○	○	○	753
Fast Fourier Transform and Two Applications	○	○	○	○	○	237
GAB (General Program for the Analysis of Biopotentials)	○	○	○	○	○	1214
I*S*P* (Interactive Signal Processor)	○	○	○	○	○	502
ILS (Interactive Laboratory System)™	○	○	○	○	○	505
ILS/SKY	○	○	○	○	○	505
IPACS (Interactive Pattern Analysis and Classification System)	○	○	○	○	○	1216
LSI-11 Audio Cassette Utility	○	○	○	○	○	580
NRL "English Text to VOTRAX Parameters" Algorithm	○	○	○	○	○	1385
Pascal-2™ Cross-Compiler to Target 68K with Concurrency Package ..	○	○	○	○	○	322
PC-11 (Process Control Operating System)	○	○	○	○	○	1131
PC/DBS (Process Control Data Base System)	○	○	○	○	○	1030
Receptor System 8835	○	○	○	○	○	523
SCAN (Single-Channel Analyzer)	○	○	○	○	○	337
SDP (Seismic Data Processing)	○	○	○	○	○	1225
SKYMNK Software Support	○	○	○	○	○	533
SPEAKR: Vented-Box Speaker Enclosure Calculator	○	○	○	○	○	1348
TCU-300 Clock Daemon for Digital Pathways UNIBUS Clock/Timer ..	○	○	○	○	○	204
VAMP (Vibration Analysis and Measurement Processor)	○	○	○	○	○	544

1592 Keyword Cross-Reference Guide

	P/OS	R/STs	RSX	RT-11	ULTRIX-11	Page
VIOS (Video Input/Output and Processing Software)	o	o	o	o	o	254
Software utilities						
ACCLON: Task Accounting Package for RSX-11M Version 3.0	o	o	o	o	o	178
ADCON (A/D Conversions) Package for Use with ADV11-C and KWV11-C	o	o	o	o	o	228
Aide-De-Camp™ Software Engineering Environment	o	o	o	o	o	258
APL-11 V1.0 for RT-11, Plus Other Software	o	o	o	o	o	559
Arabic PRO/Installation and Maintenance	o	o	o	o	o	1114
ARK — Magtape Archival and Backup Utility	o	o	o	o	o	560
ASDLOG (Automatic Searching for DIALOG Literature Search)	o	o	o	o	o	798
ASSIGN: IAS Logical Name Assignment	o	o	o	o	o	181
ATS (Active Task List Scan)	o	o	o	o	o	181
BACK/REST	o	o	o	o	o	560
BACKUP	o	o	o	o	o	561
BACKUP	o	o	o	o	o	561
BASIC Business Package	o	o	o	o	o	260
BASIC, Pascal, PortaCalc, Kermit, and a Desk Top Calendar	o	o	o	o	o	261
BASIC-PLUS System Dependency Flagger	o	o	o	o	o	229
Benchmark Monitor for RSX	o	o	o	o	o	181
BOS/5 Operating System	o	o	o	o	o	1115
BOS/MicroCobol	o	o	o	o	o	864
C Language System (Binary Version) for the Professional 300	o	o	o	o	o	865
C Language System for RT-11 (Binary Version)	o	o	o	o	o	866
C Language System in RT-11 Format	o	o	o	o	o	866
C Language System, Second Master Release	o	o	o	o	o	867
C Language System with Native Toolkit	o	o	o	o	o	868
CACHE-11M/PLUS	o	o	o	o	o	182
CALOUT/CONTRL	o	o	o	o	o	1272
CDPACK: Interface Routines for DR-11W	o	o	o	o	o	1274
CELLO — A Cell Organization Utility	o	o	o	o	o	677
CLE: Command Line Editing and Storage Utility for RSX-11M	o	o	o	o	o	1368
Clinical Data System Application Package and West Midlands RHA Blood Bank System	o	o	o	o	o	744
CLIP (Command Language Interpreter)	o	o	o	o	o	268
CMR21 Host Utility	o	o	o	o	o	993
COBEX-11	o	o	o	o	o	269
COBOL-81/RSX	o	o	o	o	o	872
Collection of California U.S. Forest Service Software	o	o	o	o	o	183
CONPAX	o	o	o	o	o	232
CONTRL	o	o	o	o	o	184
Convert Tape Utility	o	o	o	o	o	232
Converter-22	o	o	o	o	o	1278
COSAP	o	o	o	o	o	441
CTS-300 ISAM FCG Utilities	o	o	o	o	o	564
CVLLIB: General-Purpose Library for RT-MACRO and FORTRAN for the Professional	o	o	o	o	o	271
CVLLIB: General-Purpose RT-11 Library	o	o	o	o	o	272
Data I/O PROM Programmer Software and Utility Program	o	o	o	o	o	272
DATE	o	o	o	o	o	184
DATMAN (BASIC Data Manipulation Package)	o	o	o	o	o	807
DECTalk Application Support Library	o	o	o	o	o	274
DFL: A Program to Dump Physical Blocks from Floppy Disk	o	o	o	o	o	565
DIBOL Collection	o	o	o	o	o	275
DIBOL Communications Package	o	o	o	o	o	1291
DIBOL Subroutines	o	o	o	o	o	275
Dictionary with Phonetics	o	o	o	o	o	1372
DIGLIB	o	o	o	o	o	681

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
DISKIT	○	●	○	○	○	1117
MMS-500 (Data Management Services)	○	●	○	○	○	276
DSKLIB: A Disk Librarian Utility Program	○	○	●	○	○	569
DYNPRI	○	○	○	○	○	186
EDPC Utilities Package	○	●	○	○	○	570
epsitool	○	○	○	○	○	1375
European MINC Package #1 — Utilities	○	○	●	○	○	571
Everhart/Hoffing RSX Collection	○	○	●	○	○	1119
EXFILE (Exchange File Program)	○	○	○	●	○	1302
EXOS 8031 (Excelan Open Architecture Systems)	○	○	○	○	○	1302
EXOS 8032 (Excelan Open Architecture Systems)	○	○	○	○	○	1303
File Utility Programs for MU BASIC/RT-11	○	○	○	○	○	574
Floating-Point and Math Package LSI-FPP	○	○	○	○	○	282
Form Driver	●	○	○	○	○	283
FORTRAN Graphics Support for the VT105	○	○	○	○	○	686
FORTRAN/RT-11 Plotting System for the IEEE-488 HP-9872S Plotter	○	○	○	○	○	687
FPAC/DPAC Floating-Point Library	○	○	○	○	○	285
FSORT3	○	○	○	○	○	576
GPR (Graphics Plotting Routines)	○	○	○	○	○	693
GRADES: Course Management Program	○	○	○	○	○	446
Grant Clock Tasks	○	○	○	○	○	188
Graph Package	○	○	○	○	○	693
H-CHAMP	○	○	○	○	○	1120
HASP	○	○	○	○	○	1306
HASP+ RSX-11M/RSX-11M-PLUS Interconnect Software	○	○	○	○	○	1307
HASP+ RT-11 and TSX-PLUS Interconnect Software	○	○	○	○	○	1308
HEX: Hex File Editor	○	○	○	○	○	577
HIDE (Hidden Line Removal/Plotting Subprogram)	○	○	○	○	○	695
IAS105: VT105 FORTRAN Graphics Package for IAS	○	○	○	○	○	697
Idris™ Operating System	○	○	○	○	○	1122
INDENT/BASIC-PLUS-2 Programming Templates	○	○	○	○	○	287
Intercomputer File Transfer Program	○	○	○	○	○	1316
JOBDMP/JOBDSP — Job Core Image Dumper	○	○	○	○	○	188
LASL Cornucopia #1	○	○	○	○	○	291
LISTER: Listing Utility Program	○	○	○	○	○	1383
LISTRX: RSX-11D Multicolumn Listing Utility	○	○	○	○	○	1384
LOCATE — Multidevice File Locator	○	○	○	○	○	580
Log: A Log-In, Log-Out Utility for RT-11	○	○	○	○	○	190
LSTERM: Virtual Terminal Program	○	○	○	○	○	1323
M-CUBED — Multiple Microprocessor MACRO Cross-Assembler	○	○	○	○	○	293
M/11+	○	○	○	○	○	1123
MACRO-11 Input/Output Macro Subroutines Library	○	○	○	○	○	295
MACRO Library Macros for MACRO-11 Program Development and Debug	○	○	○	○	○	295
MAGIC/L™	○	○	○	○	○	903
MATCHMASTER™	○	○	○	○	○	581
MathStat Library	○	○	○	○	○	297
Matrix Routines	○	○	○	○	○	297
Matrix Subroutines	○	○	○	○	○	298
MBOS/5 Operating System	○	○	○	○	○	1124
Memory Dump	○	○	○	○	○	299
MicroPower/Pascal-Micro/RSX	○	○	○	○	○	315
Micro/RSX SORT/MERGE	○	○	○	○	○	583
MINC-11 Data Acquisition Package for RSX-11M	○	○	○	○	○	241
MINC BASIC/FORTRAN: Support for the Nicolet Explorer	○	○	○	○	○	1325
MINC RT-11/FORTRAN Support for the Nicolet Explorer Via DLV11-J Serial Line	○	○	○	○	○	1325

1594 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
MINC/FORTRAN Support for MNCKW, VT100, DLV11-J	○	○	○	●	○	1326
MODLNK	○	○	●	○	○	1326
Modula-2/RSX	○	○	○	○	○	911
MOS-11 (Memory-Only System)	○	○	●	○	○	1127
MTLIB (Magnetic Tape Driver Library and Utilities)	○	○	○	●	○	243
MTSKIN: Write on a Tape in Card Format	○	○	○	○	○	584
MTSKOUT: Read a Tape in Card Format	○	○	○	○	○	584
MUMPS-11 Library Tape	○	○	○	○	○	321
OBJCON (General-Purpose Object Module Conversion Utility)	○	○	●	●	○	244
Objective-C	○	○	○	○	●	913
On-Line Symbolic Region Access Utility for RSX-11/IAS	○	○	○	○	○	1129
One-Drive Diskette and File Copy	○	○	○	○	○	585
ORC: Object-to-MACRO Conversion	○	○	○	○	○	245
PARSE/RSX: A Flexible FORTRAN-77 Filespec Parser	○	○	○	○	○	586
PARSE/RT: A Flexible Filespec Parser for FORTRAN	○	○	○	○	○	586
PDP-8 Cross-Assembler and Utilities for RSX-11D	○	○	○	○	○	246
PIP10	○	○	○	○	○	587
Pipeline Layout #6000	○	○	○	○	○	518
PLOTXY.BAS: GIGI/Houston Instruments DMP29R X-Y Plotter	○	○	○	○	○	713
Graphics Utilities	○	○	○	○	○	713
PRINIT: Printer Initialization Routine for the LA120 Printer	○	○	○	○	○	194
The Printer's Companion	○	○	○	○	○	1163
PRM-11 (Pascal Record Management)	○	○	○	○	○	324
Professional CTS-300	○	○	○	○	○	1133
Professional Installation and Maintenance	○	○	○	○	○	1134
Professional Real-Time Interface Library	○	○	○	○	○	247
PRO/IVIS Loadable Driver and Subroutine Library	○	○	○	○	○	716
PROM Programming Software	○	○	○	○	○	248
PROM/RT-11	○	○	○	○	○	1337
PRO/RDT	○	○	○	○	○	833
PRO/VENIX™ Software Development Kit	○	○	○	○	○	329
PSYCHROM: A Calculating Psychrometric Properties Program	○	○	○	○	○	1222
QUADPACK	○	○	○	○	○	1223
RABBIT-3 System Monitor	○	○	○	○	○	196
Real-Time Interface Support for the Nicolet Explorer by the RS2232	○	○	○	○	○	718
ROU: Receive Queue and File Scan Utility	○	○	○	○	○	592
RPM	○	○	○	○	○	198
RPM (RSTS/E Performance Monitor and Optimization Tool)	○	○	○	○	○	199
RSTS-11 Library Tape 1	○	○	○	○	○	1136
RSTS-11 Library Tape 2	○	○	○	○	○	1136
RSTS Libraries for Swedish Pascal	○	○	○	○	○	931
RSTS MACRO Odds and Ends	○	○	○	○	○	931
RSTS System Utilities from the University of Tennessee	○	○	○	○	○	1136
RSTS/E File List and Scan Utilities	○	○	○	○	○	332
RSTS/E Whittier College Package, Part I	○	○	○	○	○	1137
RSTS/E Whittier College Package, Part II	○	○	○	○	○	200
RSX-11 Magtape Cornucopia	○	○	○	○	○	1138
RSX-11D Software Collection	○	○	○	○	○	1139
RSX-11D System Utility Package	○	○	○	○	○	1139
RSX-11M Datalogging System for Acurex Netpac	○	○	○	○	○	249
RT-11 File Conversion Program for Absolute Loader Paper Tapes	○	○	○	○	○	249
with SA ≤1000	○	○	○	○	○	249
RT-11 on the Professional	○	○	○	○	○	1143
RT-11 System Utilities MAPP, FIND, and GRAB	○	○	○	○	○	250
RT-11 to UNIX* Transfer Utilities	○	○	○	○	○	592
RT11/03 FORTRAN Extensions	○	○	○	○	○	934
RTPack	○	○	○	○	○	1147
SAL-11 (Structured Assembly Language)	○	○	○	○	○	937

	P/OS	RSX	RT-11	ULTRIX-11	Page
SATT: Real-Time Operating System	o	o	o	●	1147
Select	o	●	o	o	596
SIBOL (Software Ireland Business-Oriented Language)	o	o	o	o	938
SIMQU (Simulated Line Printer Queue)	o	●	o	o	201
SKIPAG: File Utility to Skip Blocks/Pages	o	●	o	o	597
SKYMNK Software Support	o	o	●	o	533
SLIB.BAS: Library Maintenance Program	o	●	o	o	598
SORT for RT-11 for the Professional 300	o	o	o	●	599
SORT: Generalized File Sort Utility	o	o	●	o	600
SORT (Singleton's Sort)	o	o	●	o	600
SORT: Utility ASCII Sort	o	o	●	o	600
SORT/MERGE	o	o	●	o	601
SOS: A Program for Saving Deleted Files	o	o	●	o	601
SourceTools™	o	●	o	o	345
SPAL-11 (Structured Programming Using Assembly Language)	o	o	●	o	939
SPELL for RSX-11M	o	o	o	●	1395
Spelling Checker with Dictionary Maintenance Utility	o	o	●	o	1396
SPOOL: Foreground Line Printer Spooler	o	o	o	●	602
Sprint	o	●	o	o	201
SPSORT (FSORT3 Emulator)	o	●	o	o	602
SPSORT (Sort-1-Plus Emulator)	o	●	o	o	602
SPSORT (SORTM/SORTG Emulator)	o	o	o	●	603
Steinmetz High School Card Reader Monitor	o	●	o	o	1151
Super Sort	o	●	o	o	603
TAM (Terminal Access Module)	o	●	o	o	203
Task Image Zapper and Other Goodies	o	o	o	●	349
TCFL: Terminal Control Function Library	o	o	o	●	351
TCUGET/TCUPUT Digital Pathways TCU-50D I/O	o	o	o	●	205
TECO, COPY, SRD, MCR, and RNO for P/OS	●	o	o	o	351
TNIX Operating System — Tektronix 856x Series	o	o	o	o	1151
TSXLIB: A Library Implementation of EMTs for TSX-PLUS Version 5.1	o	o	o	o	1153
TTLIB: VT100 Library Routines	o	o	o	●	354
TTLIB: VT100 Library for the Professional 300	o	o	o	●	354
UNIX* Utility Pack	o	o	o	●	356
UPFINF: Get Accounting Information for IAS	o	o	o	o	206
UPFMOD: Modify Accounting File for IAS	o	o	o	o	206
User Command Linkage-Plus	o	o	o	●	357
USERBASICS	●	o	o	o	358
USERMN: An Idle-Terminal Monitor for RSX-11	o	o	o	●	207
Utility Routines ASCIB, JLBITS, and CSISR	o	o	●	o	253
Utility Routines for a PDP-11/45 with a Floating-Point Processor	o	●	o	o	543
UTL	o	●	o	o	208
VFM (Viking Forms Manager)	●	o	o	o	359
VFY: RT-11 Disk-Verification Utility	o	o	o	●	605
VLOAD: A Program for RT-11 Extended Memory Monitor	o	o	o	●	209
VRTARY (Virtual Array Access Routines for RT-11 and TSX-PLUS)	o	o	o	●	360
VTERM (Virtual Terminal Support): MINC BASIC/FORTRAN IV	o	o	o	o	1359
W	o	●	o	o	209
Wittenberg University Utility Package	o	●	o	o	360
WUTIL	o	●	o	o	210
XFR/XSL — RSX to RSX Communications Utility	o	o	●	o	1362
ZIPSORT-11	o	o	●	o	210
Source code control					
AIS-PL/I Compiler	●	●	o	o	855
AUTOVAX	o	●	o	o	858
BMUX: A Protocol Converter Program	o	o	o	●	1269

1596 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
C Cross-Compiler for National Semiconductor Series 32000	o	o	●	o	o	865
CDOC — C Source Code Format Utility	o	o	o	o	o	267
CIT101: Routines to Drive the CIT101 and VT100 Terminals	o	o	o	●	o	267
Data Base Management Package, Source Only, for the Professional 300	o	o	o	●	o	804
DN-11 Device Driver for RSX-11	o	o	●	o	o	1293
DR11-A/C Loadable Driver with Build Package	o	o	●	o	o	1296
Enforcer I™	o	o	o	o	o	278
EXTMT: A General-Purpose Magnetic Tape Handler	o	o	o	●	o	571
FALCON Application for RT-11	o	o	o	●	o	572
FCP (FORTRAN Code Preprocessors)	●	o	o	o	o	881
FILDMP: File Dump Utility and Object Module Cracker	o	o	●	o	o	280
FLECS (FORTRAN Language with Extended Control Structures)	o	o	o	●	o	882
HASP COMBOARD™	o	●	●	o	o	1307
Instrument Bus Subroutines	o	o	o	●	o	1316
InterUp (ISM Universal Programming Tool)	o	o	o	o	o	287
Kermit and CPMUG Grab Bag	o	o	●	o	o	1318
NDTRAN2	o	●	o	o	o	513
OS/ED (Screen Editors)	o	o	o	o	●	1386
Pascal Compiler	o	o	●	o	o	915
PL.MAC: A Write-Only Device Handler for the IEEE-488 Interface 11-482	o	o	o	●	o	1332
PRO/VENIX™ Software Development Kit	o	o	o	o	o	329
Real Estate Information System	o	●	●	●	●	1200
RENUM: FORTRAN Renumbering Program	o	o	o	o	o	330
RENUM: FORTRAN Renumbering Program	o	o	o	o	o	330
RENUM.BAS (BASIC File-Renumbering Program)	o	o	o	o	o	331
RENUM/PRENUM BASIC Renumberer	o	●	o	o	o	331
RESEQX	o	●	o	o	o	331
RSTS/E File List and Scan Utilities	o	●	o	o	o	332
RTL/2 (Real-Time Language)	o	o	o	o	o	935
SCCS (Source Code Control system)	o	o	●	o	o	338
SLDRV: A Memory-Resident Disk Driver for RSX-11	o	o	o	o	o	598
SourceTools™	o	●	o	o	o	345
SUBS (Standard Subroutine Library), Version II	o	●	o	o	o	346
The Toolbox	o	●	●	●	o	352
Uniq™ UNIX* System V	o	o	o	o	o	1154
Utility Routines ASCIB, JLBITS, and CSISR	o	o	●	o	o	253
XENIX® Operating System	o	o	o	o	o	1157
XREF	o	o	o	●	o	605
Spreadsheets						
A-to-Z Supercomp-Twenty™	o	o	●	o	o	611
ABC (Automated Bank Control System)	o	o	o	●	o	612
BASIC, Pascal, PortaCalc, Kermit, and a Desk Top Calendar	●	o	o	o	o	261
BOS/Planner	o	o	o	o	o	1079
C-CALC	o	●	●	o	o	621
CALC-11/CALC-11 PLUS	o	●	●	●	o	621
Client Write-Up	o	●	o	o	o	52
CMIS (Mental Health Management Information System)	o	o	o	●	o	745
CopyCalc	o	●	o	o	o	54
CSI General Ledger	o	o	●	o	o	56
Data*Model Spreadsheet Management System	o	●	●	●	o	625
DataCalc	o	●	●	●	o	625
DIGICALC™	o	●	o	o	o	627
DIGIPORT	o	●	o	o	o	1292
FACS — Fixed Asset Management	o	●	o	o	o	66
FINAR (Financial Analysis and Reporting System)	o	●	●	o	o	630

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Flexware Accounting Package	o	o	o	o	o	73
Flexware Accounts Receivable	o	o	o	o	o	74
Flexware General Ledger	o	o	o	o	o	75
Flexware Spreadsheet	o	o	o	o	o	78
FPS80	o	●	●	o	o	633
General Ledger and Financial Reporting	●	●	●	o	o	85
LEX-11	●	●	●	●	●	1092
MAGIC*CALC	o	o	●	●	o	638
MAPS/MODEL	o	●	o	o	o	639
MEDREP — Systems for Preparation of Medicaid/Medicare Reports ..	o	●	o	o	o	772
Multiplan® Electronic Worksheet	o	o	o	o	●	639
NYPLAN	o	●	●	●	o	640
Plessey-CALC	o	●	●	●	o	1098
PORTACALC (AnalytiCalc): A 3-D Spreadsheet/Data Base System in VMS/BACKUP	o	●	●	o	o	831
PORTACALC XL: Floppy Version	o	o	●	o	o	832
PORTACALC/AnalytiCalc: A 3-D Spreadsheet/Data System	o	●	●	o	o	832
PRO-FPS	●	o	o	o	o	645
PRO/Applications Starter Kit for Diskette or Hard Disk	●	o	o	o	o	1164
PRO/DIGICALC	●	o	o	o	o	646
RISKAN1/RISKAN2 (Risk Analysis — General/Risk Analysis — Accounting)	o	●	●	●	o	971
SATURN-CALC™ Electronic Spreadsheet	●	●	●	●	o	648
Supercomp-Twenty™	●	o	o	o	o	649
Synergy	●	o	o	o	o	1164
TOLAS Inquiry and Reporting System	o	●	o	o	o	143
UltraCalc®	o	o	o	o	●	1164
VC	o	o	o	o	●	1110
ViewComp Electronic Spreadsheet	o	o	o	o	●	651
VMIS (Visiting Nurse Home Health Management Information System)	o	o	o	●	o	792
ZIN	o	o	o	o	●	147
ZPLAN PLUS	o	●	o	o	o	651
Statistics						
ABC/Analyst	o	●	●	o	o	612
Academic Management Systems	o	●	o	o	o	430
ACCLOG: Task Accounting Package for RSX-11M Version 3.0	o	o	o	o	o	178
Apex Home Health Management System	o	o	o	●	o	735
APS (Accounts Payable System)	o	●	o	o	o	735
ATT (Automated Time and Attendance)	o	●	o	o	o	1169
Bacteriology Module: Leadership Series™	o	o	o	o	o	736
BASIC-PLUS System Dependency Flagger	o	●	●	o	o	229
Benchmark Monitor for RSX	o	o	●	o	o	181
Blood Bank Module: Leadership Series™	o	o	o	o	o	737
BMUX: A Protocol Converter Program	o	o	o	●	o	1269
CADA-1983 (Computer-Assisted Data Analysis Monitor)	o	●	o	o	o	433
CASANOVA (Computer-Assisted Instruction in Analysis of Variance) ..	o	●	o	o	o	435
CDDRV (Cached Pseudo Disk CD)	o	o	●	o	o	1274
CHARGER	o	●	o	o	o	742
Clinical Support Systems: Leadership Series™	o	o	o	o	o	744
COSAP	o	●	o	o	o	441
COSAP™ (Conversationally Oriented Statistical Analysis Package) ..	o	●	o	o	o	484
Country Club Golf Handicapping System	o	●	o	o	o	166
DATS	●	o	●	o	o	680
Doctor Billing	o	o	o	●	o	751
DOSRES (Quantal Dose-Response Analysis)	o	o	o	o	o	752
Episodic Billing System	o	●	o	o	o	752

1598 Keyword Cross-Reference Guide

	P/Os	RSTS	RSX	RT-11	ULTRIX-11	Page
EXP1234 (Exponential Model Fitter)	o	o	●	o	o	494
FEED-MAN Feed Analyzer	o	o	●	o	o	152
FISH: Post- and Interspike Interval Analysis	o	o	o	o	o	1212
FLIP: A Computer Program for Fuzzy Reasoning	o	o	o	o	●	168
GIGI Software	o	o	●	o	o	689
GLIM-3	o	o	●	o	o	1215
GLS (General Ledger System)	o	o	●	o	o	754
Golf League Records	o	o	o	o	●	170
GRADES: A Program to Facilitate the Administrative Aspect of Grading	o	o	●	o	o	446
GRADES: Course Management Program	o	o	●	o	o	446
GRADES (Grading, Recording, and Analyzing Diverse Evaluations of Students)	o	o	o	o	●	446
GS-400 Circulation Control System	o	o	o	o	o	954
Healthcare	o	o	o	o	●	756
HomeRange	o	o	o	o	o	154
Housing Authority Tenant Accounting	o	o	o	o	o	1197
IMSL Library	o	o	●	o	o	506
Insurance Agency (Casualty)	o	o	o	o	o	847
IPACS (Interactive Pattern Analysis and Classification System)	o	o	o	o	o	1216
LABplus (Laboratory Information System)	o	o	o	o	o	764
Linwood (Linear Least-Squares Curve-Fitting Program)	o	o	o	o	o	508
L/P (Labor Performance), MCBA, Inc.	o	o	●	o	o	964
Marketab®	o	o	o	o	●	1236
MATCHUP: Assignment	o	o	●	o	o	1171
MathStat Library	o	o	●	o	o	297
MCSIM (Monte Carlo Simulation)	o	o	o	o	●	511
MINI-PHARM (Minicomputer Hospital Pharmacy Package)	o	o	o	o	o	772
Minitab® Data Analysis Software	●	o	o	o	o	1218
MLP (Maximum Likelihood Program)	o	o	o	o	o	1219
MONTR: A Display Program for RSTS/E	o	o	o	o	o	1127
MRS (Medical Records System)	o	o	o	o	o	774
NAG FORTRAN Library Service	o	o	o	o	o	1219
NONLIN (Nonlinear Least-Squares Curve-Fitting Program)	o	o	o	o	o	514
Observer	o	o	o	o	o	1128
OSS (Optimal Sampling Schedule Designs)	o	o	o	o	o	1221
Pack	o	o	●	o	o	830
PAIS (Patient Accounting and Information System)	o	o	o	o	o	776
PASS (Payroll and Staffing System)	o	o	o	o	o	778
Pathology Billing	o	o	o	o	o	778
Pharmacy Module: Leadership Series™	o	o	o	o	o	781
Project Delta, Section B: Statistics	o	o	o	o	o	519
Project Delta, Sections E and F: Additional Mathematics and Teacher Assistance	o	o	o	o	o	520
PRO/Laboratory Subroutine Package	o	o	o	o	o	248
PRO/Scientific Subroutine Package	o	o	o	o	o	327
QMS PROGRAMS® Computer Software/Cost of Quality and Material Review	o	o	o	o	o	1041
QMS PROGRAMS® Computer Software/Customer Complaint and Field-Failure Analysis	o	o	o	o	o	1041
QMS PROGRAMS® Computer Software/Defect Analysis	o	o	o	o	o	1042
QMS PROGRAMS® Computer Software/Environment	o	o	o	o	o	1042
QMS PROGRAMS® Computer Software/Materials	o	o	o	o	o	1044
QMS PROGRAMS® Computer Software/Process Capability Studies	o	o	o	o	o	1045
QMS PROGRAMS® Computer Software/Product Shelf Life and Stability	o	o	o	o	o	1046
QMS PROGRAMS® Computer Software/Statistical Process Control	o	o	o	o	o	1046
QMS PROGRAMS® Computer Software/Supplier Ratings	o	o	o	o	o	1047

	PDS	RSTS	RSX	RT-11	ULTRIX-11	Page
QMS PROGRAMS® Computer Software/What-If Studies	○	○	●	○	○	1047
Radiology Billing	○	○	●	○	○	785
Random-Number Generator	○	○	○	●	○	132
Regression Analysis for Michaelis-Menten Kinetic Data	○	○	○	○	●	523
RESPOND	○	○	○	○	○	198
ROLMAN III	○	○	○	○	○	456
RSTS Performance Measurement Package	○	○	○	○	○	199
RSX-11M-PLUS System Accounting Reports with DATATRIEVE	○	○	○	○	○	200
Salerno/SPM+ (Statistical Process Monitoring)	○	○	○	○	○	1050
Sampler	○	○	○	○	○	1071
SCORE	○	○	○	○	○	460
Shop Floor Control Systems	○	○	○	○	○	407
SIBYL/RUNNER® Interactive Forecasting System	○	○	○	○	○	972
SPM-11M-PLUS (Software Performance Monitor)	○	○	○	○	○	1149
SPM-11M (Software Performance Monitor)	○	○	○	○	○	1150
SPSS-11™	○	○	○	○	○	839
SPSS/PRO™	○	○	○	○	○	840
SPY: RSX Accounting System	○	○	○	○	○	201
SSP-11 (Scientific Subroutine Package)	○	○	○	○	○	535
STACS (Serials Tracking and Control System)	○	○	○	○	○	956
STAT-11: Statistical Package	○	○	○	○	○	535
STONE: A Program for Resolving Mossbauer Spectra	○	○	○	○	○	536
Student Administrator	○	○	○	○	○	463
SVD (Singular-Value Decomposition)	○	○	○	○	○	540
SYZER: RT-11 System Sizer	○	○	○	○	○	203
Transportation/Airline/Airport Management Information System	○	○	○	○	○	1423
TSH/Ordinary Insurance Administration	○	○	○	○	○	850
TSRUAP (A TSX-PLUS™ System Resources Utilization Accounting Package)	○	○	○	○	○	205
TTEST	○	○	○	○	○	541
ULISYS	○	○	○	○	○	957
USE: CPU Usage Monitor Display Facility for RSX-11M	○	○	○	○	○	207
Variable-Metric Routine for Function Minimization	○	○	○	○	○	545
Wabash College Student Information System	○	○	○	○	○	465
Whetstone Benchmarks	○	○	○	○	○	210
Wittenberg University Utility Package	○	○	○	○	○	360
Structural engineering						
ANKOR	○	○	○	○	○	468
BFTHK	○	○	○	○	○	469
BONDJT	○	○	○	○	○	470
BOUSQ (Boussinesq)	○	○	○	○	○	470
BOXCUL (Box Culvert)	○	○	○	○	○	470
C300	○	○	○	○	○	471
C301A	○	○	○	○	○	472
C301B	○	○	○	○	○	472
C302	○	○	○	○	○	473
C303	○	○	○	○	○	474
CBUMP — Automotive Bumper Dynamic Impact	○	○	○	○	○	475
Chanel	○	○	○	○	○	477
CMODEL — Finite Element Model Builder	○	○	○	○	○	480
Cobra	○	○	○	○	○	214
Cones	○	○	○	○	○	483
COORD	○	○	○	○	○	483
CLOT — Graphics Plotter Program	○	○	○	○	○	484
CPOST — Postplotter for Finite Element Output	○	○	○	○	○	485
CRPLT	○	○	○	○	○	485
CSEAT — Seat Frame Analysis Code	○	○	○	○	○	486

1600 Keyword Cross-Reference Guide

	P/OS	ASTS	RSX	RT-11	ULTRIX-11	Page
DLOAD	○	●	○	○	○	490
Elbow	○	○	○	○	○	493
FLGTHK	○	○	○	○	○	494
Gasket	○	○	○	○	○	497
Hammer	○	○	○	○	○	499
HBOLTS	○	○	○	○	○	499
HSULF (Hydrogen Sulfide)	○	○	○	○	○	501
Loads	○	○	○	○	○	509
M11 PIPE	○	○	○	○	○	510
MBP (Metal Building Program)	●	○	○	○	○	510
MOFI	○	○	○	○	○	512
Network	○	○	○	○	○	514
NEUPAN (Neutral Point Analysis)	○	○	○	○	○	514
Offset	○	○	○	○	○	515
OLANDR	○	○	○	○	○	516
Outlet	○	○	○	○	○	516
Paris	○	○	○	○	○	517
PIPCOS	○	○	○	○	○	517
Pipeline Layout #6000	○	○	○	○	○	518
PLDATA	○	○	○	○	○	519
RCPULT	○	○	○	○	○	522
REVR4	○	○	○	○	○	525
REWALL (Retaining Wall Design)	○	○	○	○	○	525
SDP-PLUS (Structure Determination Package)	○	○	○	○	○	1225
SIZEB	○	○	○	○	○	531
SIZEE	○	○	○	○	○	531
SIZEP	○	○	○	○	○	532
SIZET	○	○	○	○	○	533
Span	○	○	○	○	○	534
Stress	○	○	○	○	○	536
STRESS-11: A Structural Analysis Program	○	○	○	○	○	537
STRESS (Structural Engineering Solver)	○	○	○	○	○	537
Structural Member Analysis Programs	○	○	○	○	○	538
Ultima	○	○	○	○	○	542
USBRJT	○	○	○	○	○	543
VAMP (Vibration Analysis and Measurement Processor)	○	○	○	○	○	544
WTCOAT	○	○	○	○	○	546
Systems communications						
BASIC, Pascal, PortaCalc, Kermit, and a Desk Top Calendar	●	○	○	○	○	261
Bridge/86	○	○	○	○	○	1080
CMR21 Host Utility	○	○	○	○	○	993
FEPCM Software Tools Kit	○	○	○	○	○	279
GIGIC2: GIGI Graphics Printout on a Low-Priced C-ITOH Printer	○	○	○	○	○	690
GPIB Software	○	○	○	○	○	286
KMV11-A Development Tools	○	○	○	○	○	290
LAD/11 (Local Area Devices) for RSX	○	○	○	○	○	579
LOAD PDT	○	○	○	○	○	1162
Miracle Viewdata	○	○	○	○	○	826
MRRT-11 (Memory-Resident RT-11)	○	○	○	○	○	1128
Nicolet 1090 Digital Oscilloscope Handler and Interface to PDP-11	○	○	○	○	○	244
OS/RT (Real Time O.S. Kernel)	○	○	○	○	○	1130
PC4014 Terminal Emulator	●	○	○	○	○	706
PDL and PDL/81 (Program Design Language)	○	○	○	○	○	917
PIP10	○	○	○	○	○	587
PRO-CP/M®-80	○	○	○	○	○	1133
PRO/Tool Kit Real-Time Interface Library	●	○	○	○	○	328
PRO/VENIX™ Base System Kit	○	○	○	○	○	1135

	P/OS	R/ST	R/SX	RT-11	ULTRIX-11	Page
RTMASCOT	○	○	○	●	○	1146
STAR-eleven	○	○	○	○	○	1150
SUPERDBG	○	●	●	●	●	346
TED (The NDSU Terminal Editor)	○	○	○	○	●	1399
Taxes						
1040 Tax Planner	○	●	●	○	○	610
1040 Tax System	○	○	●	○	○	610
1040 Tax System	○	○	○	●	○	610
Accounts Receivable and Statement Generation	●	○	○	○	○	27
AiM™ Payroll — Interactive	○	●	○	○	○	31
AIM/PR (Accounting Information Manager for Payroll with Cost Accounting)	○	○	○	○	○	32
APPGEN Fixed Assets	○	○	○	○	○	36
APPGEN Payroll	○	○	○	○	○	1168
CAS.4 (Payroll)	○	○	○	○	○	49
CLASS — Educational Payroll System	○	●	○	○	○	439
Clover Personal Income Tax Package	○	○	○	●	○	53
FACS — Patronage Accounting	○	○	○	○	○	628
Fixed Asset Depreciation	○	○	○	○	○	70
Fixed Assets	○	○	○	○	○	70
Fixed Assets	○	○	○	○	○	71
GOV-11: Governmental Management System	○	○	●	○	○	658
Government Payroll System	○	○	○	○	○	659
InterFad™	○	○	○	○	○	637
MAMS (Municipal Accounting Management System)	○	○	○	○	○	660
MUNIS/PLUS	○	○	○	○	●	664
PAX	○	○	○	○	○	642
Pay (Canadian Payroll)	○	○	○	○	○	107
Payroll	○	○	○	○	○	107
Payroll	○	○	○	○	○	108
Payroll	○	○	○	○	○	109
Payroll	○	○	○	○	○	111
Payroll	○	○	○	○	○	112
Payroll	○	○	○	○	○	451
Payroll	○	○	○	○	○	1172
Payroll System	○	○	○	○	○	114
Payroll System	○	○	○	○	○	1172
PRO-IV Tax Management	○	○	○	○	○	127
REAS (Real Estate Appraisal System)	○	○	○	○	○	664
SL-11 Amusement Devices Accounting System	○	○	○	○	○	173
Tax-11	○	○	○	○	○	666
Tax Planner	○	○	○	○	○	650
TBS Payroll Accounting	○	○	○	○	○	140
Timeline Fixed Assets	○	○	○	○	○	142
Telecommunications						
ACCES Network Virtual Terminal Service	○	○	○	○	○	1261
ACCES NPP (Network Protocol Package)	○	○	○	○	○	1261
Accounts Payable System	○	○	○	○	○	20
AnaTOLL	○	○	○	○	○	549
Any Databridge	○	○	○	○	○	1266
Any Master Network	○	○	○	○	○	1267
AutoTELEX	○	○	○	○	○	1268
BFX (Bulk File Transfer)	○	○	○	○	○	1268
BLAST® (Blocked Asynchronous Transmission)	○	○	○	○	○	1269
BT-II Voice Response Peripheral	○	○	○	○	○	1271
BURCOM (DIGITAL/Burroughs Communication System)	○	○	○	○	○	1271
Call Tracker	○	○	○	○	○	1231

1602 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
CALOUT	○	●	●	○	○	1272
CALOUT/CONTRL	○	●	●	○	○	1272
CB-User Communication Utility	○	○	○	○	○	1273
CMS (Cable Television Management System)	○	○	●	○	○	1066
COMIT (Communications Management Information Tool)	○	●	●	●	○	1181
ComLINK: Remote Communications Enhancement	○	○	○	○	○	1275
CUX: A Virtual Terminal Program	○	○	●	○	○	1279
Data Entry Interface to Remote Hand-Held Computer	○	●	○	○	○	1280
DECnet/SNA RSX 3270 Terminal Emulator	○	○	●	○	○	1287
DECnet/SNA RSX Application Interface	○	○	●	○	○	1288
DECnet/SNA RSX Remote Job Entry	○	○	●	○	○	1289
DEctalk Application Support Library	○	○	●	○	○	274
Depreciation System	○	○	○	○	○	627
DIALBACK	○	●	●	○	○	1289
DIALUP	○	○	●	○	○	1290
DIGICOMM-11	○	○	●	○	○	1291
DN-11 Driver for RSTS/E Version 7.0	○	○	●	○	○	1294
F*I*R*E Report Writer	○	○	○	○	○	812
FACS (Flexible Automated Collection System)	○	○	○	○	○	1088
FTX Funds Transfer System	○	○	●	○	○	633
General Ledger	○	○	○	○	○	634
GVS/File	○	○	○	●	○	1306
HASP + RSX-11M/RSX-11M-PLUS Interconnect Software	○	○	○	○	○	1307
HASP + RT-11 and TSX-PLUS Interconnect Software	○	○	○	○	○	1308
IBM 2780/3780	○	○	○	○	○	1310
IBM 3270	○	○	○	○	○	1310
IBM HASP	○	○	○	○	○	1310
IBM-SDLC/HDLC-UNC	○	○	○	○	○	1311
KMV11-A Development Tools	○	○	○	○	○	290
MACS-11 (Media Access and Conversion System for PDP-11)	○	○	○	○	○	241
Micro/RSX 2780/3780 Emulator	○	○	○	○	○	1324
Micro/RSX 3271 Protocol Emulator	○	○	○	○	○	1324
MODLNK	○	○	○	○	○	1326
MOSTE (Management of System Telephone Expenses)	○	○	○	○	○	1185
Multiuser DTR	○	○	○	○	○	1327
NETEX (Network Executive)	○	○	○	○	○	1328
NEXUS Communications Software	○	○	○	○	○	1328
Payroll/Checkwriting System	○	○	○	○	○	115
PC-102	○	○	●	●	○	1330
PC4010	○	○	○	○	○	1330
PRO-2780/3780 Communications Applications	○	○	○	○	○	1333
PRO/DECnet	○	○	○	○	○	1335
Professional Host Communications	○	○	○	○	○	1336
PRO/NAPLPS	○	○	○	○	○	1337
PRO/RDT	○	○	○	○	○	833
PRO/SNA Communications	○	○	○	○	○	1338
Q-CALL	○	○	○	○	○	1100
RCC Billing/Inventory System	○	○	○	○	○	1186
RJE (Remote Job Entry)	○	○	○	○	○	1340
Sales Prospect Data Base	○	○	○	○	○	1243
SCORE (Supervisory Control of Refrigeration Equipment)	○	○	○	○	○	1052
SofGram Electronic Communications	○	○	○	○	○	1108
TANGO	○	○	○	○	○	1349
TC (Total Communicator)	○	○	○	○	○	1349
Telephone Accounting and Billing System	○	○	○	○	○	1187
TelEquip	○	○	○	○	○	1188
TSTE (Time-Share Terminal Emulator)	○	○	○	○	○	1352
UNIVAC NTR	○	○	○	○	○	1354

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
UNIVAC UTS400	○	○	●	○	○	1355
VT (Virtual Terminal)	○	○	○	●	○	1358
X25-LAPB/HDLC-BAC	○	○	○	●	○	1361
XNS/ITP (Xerox Network Systems Internet Transport Protocols)	○	○	○	○	○	1362
Text management						
CAIRS (Computer-Assisted Information Retrieval Systems)	○	●	●	○	○	801
CAIRS Special Librarian	●	●	○	○	○	954
CAMIC (Computer-Aided Microprocessing)	○	○	○	○	●	266
CDOC — C Source Code Format Utility	○	○	○	○	○	267
CPS Word Processing System	○	●	○	○	○	1082
CT*OS/IT*OS Word Processing	●	●	○	○	○	1083
Data Base Management Package	○	○	○	○	●	803
Data Base Management Package, Binary Kit Only, for the Professional 300	○	○	○	○	○	803
Data Base Management Package, Source Only, for the Professional 300	○	○	○	○	○	804
DATATRIEVE-11	○	○	●	○	○	805
DATATRIEVE-11/IAS	○	○	○	○	○	806
DECdx/RSX	○	○	○	○	○	235
DECWORD/DP and DECWORD for Micro/RSTS	○	○	○	○	○	1085
DMG/FLOW	○	○	○	○	○	681
DPH: File Header Dump Program	○	○	○	○	○	568
Dreams	○	○	○	○	○	1086
EDIGRAF — Batch Edit for Intergraph Design Files	○	○	○	○	○	684
File Manipulation Commands	○	○	○	○	○	573
FORTH: Programming System	○	○	○	○	○	1213
GIGI Software	○	○	○	○	○	689
HCGS (Host Computer Graphics Software)	○	○	○	○	○	695
I/CAP (Interactive Electronic Circuit Analysis Program)	○	○	○	○	○	503
Idris™ Operating System	○	○	○	○	○	1122
INDEX: FORTRAN Cross-Referencer	○	○	○	○	○	892
INDEX: FORTRAN Cross-Referencer	○	○	○	○	○	892
InterText™	○	○	○	○	○	1090
LABELS: The Mailing List System	○	○	○	○	○	1091
Leverage	○	○	○	○	○	821
LEXET	●	○	○	○	○	1092
Lyrix™ Word Processing System	○	○	○	○	○	1093
Miracle Viewdata	○	○	○	○	○	826
Mistress Relational Database Management System	○	○	○	○	○	827
PEP (Program Editor and Processor) Programming System	○	○	○	○	○	918
PER-FORM™ (Personalized Form Letters)	○	○	○	○	○	1098
PLOT55 for the VT125 (VT105 Emulator) Under RT-11 FORTRAN ..	○	○	○	○	○	712
P/OS Diskette, Hard Disk, and Hard Disk (Arabic)	○	○	○	○	○	1132
PS (Personal Secretary)	○	○	○	○	○	1100
Q-NOTE	○	○	○	○	○	1102
Q-ONE	○	○	○	○	○	1103
QUEST Graphical and Text Information System	○	○	○	○	○	717
QUILL	○	○	○	○	○	835
REF-11™	○	○	○	○	○	955
RNI (WRDPRO—Word Processing/Text Editing)	○	○	○	○	○	1105
RSX-11M/FORTRAN Real-Time Package for MINC	○	○	○	○	○	1142
RT-11 V2.0/MU BASIC Utilities Package	○	○	○	○	○	334
SCCS (Source Code Control system)	○	○	○	○	○	338
TABS	○	○	○	○	○	603
TFONT (Text Font Design Program)	○	○	○	○	○	729
Word List Processing	○	○	○	○	○	1111
XENIX® Operating System	○	○	○	○	○	1157

1604 Keyword Cross-Reference Guide

	P/O	R/S	R/SX	RT-11	ULTRIX-11	Page
XWORD	o	•	o	o	o	1111
Textiles/clothing						
AMS (Apparel Manufacturing System)	o	o	•	•	o	984
Apparel Master™	o	o	o	o	o	369
ATOMS (Advanced Textile Operations Management Systems)	o	o	•	o	o	985
Clothier	o	o	o	•	o	1408
COLOR (Color Consultants Information System)	o	o	o	•	o	1247
DPM (Dyeing Process Management)	o	o	•	o	o	1002
Trade						
Canadian Mortgage Calculation Program	o	o	o	•	o	622
Translators						
Allen-Bradley Translator Software	o	o	•	o	o	983
ASCII to EBCDIC or EBCDIC to ASCII String Translation (FNEBCASC)	o	•	o	o	o	229
AUTOVAX	o	•	o	o	o	858
BASIC-L	o	o	o	o	•	861
BASTOC™ (BASIC to C)	o	o	o	o	o	864
CADO2C (Conversion Package for CADOL Software)	o	o	o	o	•	231
CONPAX	o	•	•	•	o	232
CPMRSX: CP/M® to DIGITAL Disk Translator for RSX-11M	o	o	•	o	o	564
DIBOL Translator	o	o	o	•	o	877
DIGIPOINT	o	•	o	o	o	1292
DSM-11 Translator	o	o	o	o	o	879
Duxbury Braille Translator	o	•	•	•	o	1068
epsitool	o	o	•	o	o	1375
FCP (FORTRAN Code Preprocessors)	•	o	o	o	o	881
FIXIT: BASIC Translator	o	•	•	o	o	881
FLECS (FORTRAN Language with Extended Control Structures)	o	o	o	•	o	882
FORTRIX-C (FORTRAN to C Translator)	o	•	•	•	•	889
LALR (1) Parser Constructor to Translate Computer Languages	o	•	•	•	o	893
MacroVAX	o	o	•	o	o	902
MACS-11 (Media Access and Conversion System for PDP-11)	o	o	o	•	o	241
Microbench C Cross-Compiler for the Intel 8086/8087/8088	o	o	o	o	•	309
Microbench FORTRAN-77 Cross-Compiler for the Intel 8086/8088	o	•	•	•	o	310
Microbench Pascal Cross-Compiler for the Intel 8086/8088	o	•	•	•	o	311
MIRA	o	o	o	o	o	319
Mnemonic Dump	o	o	o	•	o	911
OBJCON (General-Purpose Object Module Conversion Utility)	o	•	•	•	o	244
ORC: Object-to-MACRO Conversion	o	o	•	o	o	245
PROM Programming Software	o	o	•	•	o	248
S-TRAN™ BASIC to C Translator	o	o	•	o	o	335
TREAD: Subroutines to Read/Write IBM Standard Label RECFCM = FB Magnetic Tapes	o	o	•	o	o	604
Transportation						
Export Package	o	•	o	•	o	382
FACTS V Systems of Tire Control	o	o	o	•	o	628
Freight Forwarder System	o	•	o	o	o	383
International Trade Software	o	•	o	•	o	1410
Travel System 4/11	o	•	•	o	o	1256
Warehousing						
ABC/Inventory System	o	•	o	o	o	979
AIM (Automatic Inventory Management)	o	o	•	o	o	368
APPGEN Inventory/Order Entry	o	o	o	o	o	369
APR (Automated Production Reporting) System	o	o	•	o	o	422

	P/OS	R/ST	R/SX	RT-11	ULTRIX-11	Page
Bar-Coded Systems	○	○	○	●	○	800
COP (Customer Order Processing), MCBA, Inc.	○	○	●	●	○	998
Culinary Operations Information System	○	○	○	○	○	1248
Distribution — Wholesale and Retail	○	●	○	○	○	375
Distribution System (Wholesale/Retail)	○	○	○	○	○	376
Enterprise Distribution	○	●	○	○	○	381
Freight Forwarder System	○	●	○	○	○	383
HOST-AGV (Host-Automated Guided Vehicles)	○	○	○	●	○	1010
Identopick	○	○	●	○	○	385
Inventory	○	○	○	●	○	386
Inventory	○	○	○	○	●	386
Inventory Control	○	○	●	○	○	387
Inventory Management	○	○	●	○	○	1014
IV-11 Inventory Control System	○	●	○	○	○	221
LEDGR	○	○	○	●	○	820
MBS ASR (Manus Business Systems Automatic Stock Replenishment)	○	○	○	●	○	389
MBS IM (Manus Business Systems Inventory Management)	○	○	○	○	●	389
MBS OP (Manus Business Systems Order Processing)	○	○	○	○	●	390
MBS PO (Manus Business Systems Purchase Order Management)	○	○	○	○	●	391
MBS WD (Manus Business Systems Automotive Parts Warehouse Distributor System)	○	○	○	○	○	391
Order Eleven	○	○	○	○	○	393
Order Entry and Invoicing	○	○	○	○	●	394
ORDERS Wholesale Distributor System	○	○	○	○	●	397
PENQUIN™	○	○	○	○	●	399
Perspective/700 Inventory Management	○	○	○	○	○	399
PICS (Parts Inventory Control System)	○	○	○	○	●	1253
Pioneer COMMAND Inventory Management Module	○	○	○	○	●	401
PMS (Preventive Maintenance Scheduling System)	○	○	○	○	○	1036
PRO-IV Inventory Control	○	○	○	○	○	125
Shelf	○	○	○	○	○	1413
SMARTEYE Routing Controller	○	○	○	○	○	408
STRADIS	○	○	○	○	○	409
Vista Publishing and Distribution System	○	○	○	○	○	1073
Warehousing/Order Entry/Inventory/Purchasing	○	○	○	○	○	412
WDS/2 (Warehouse Distributor System)	○	○	○	○	○	413
Zip-Check	○	○	○	○	○	418
Zip-Man™	○	○	○	○	○	419
Zip-Pick™ Warehouse Automation System	○	○	○	○	○	419
Wholesale						
ACCDIBS (Accountant DIBS — Turnkey)	○	○	○	○	○	364
ACCDIBSAP (Accountant DIBS Accounts Payable)	○	○	○	○	○	364
ACCDIBSAR (Accountant DIBS Accounts Receivable)	○	○	○	○	○	364
ACCDIBSGL (Accountant DIBS General Ledger)	○	○	○	○	○	365
ACCDIBSIO (Accountant DIBS Inventory and Order Entry)	○	○	○	○	○	365
ACCDIBSPR (Accountant DIBS Payroll)	○	○	○	○	○	366
ACCDIBSSA (Accountant DIBS Sales Analysis)	○	○	○	○	○	366
CP-11 Coupon Redemption System	○	○	○	○	○	1232
Customer Order Processing	○	○	○	○	○	371
Daymark Wholesale Distribution System	○	○	○	○	○	372
DDP PAR (Accounts Receivable)	○	○	○	○	○	59
DEctap Tailored Application Programs: Wholesale System	○	○	○	○	○	373
DIBS-11 Order Entry/Inventory Management for CTS-300	○	○	○	○	○	62
DIBS-11 Order Entry/Inventory Management for RSTSE	○	○	○	○	○	63
DIBS-11/UK	○	○	○	○	○	374
Distribution — Wholesale and Retail	○	○	○	○	○	375

1606 Keyword Cross-Reference Guide

	P/OS	RSTS	RSX	RT-11	ULTRIX-11	Page
Distribution System (Wholesale/Retail)	o	●	o	o	o	376
DOVETAIL Wholesale Distributor	o	●	o	o	o	376
DTRO Order Processing System	o	●	●	o	o	379
Electronic Component Distribution System	o	●	o	o	o	380
IN-TOUCH™	o	●	o	o	o	1409
MBS ASR (Manus Business Systems Automatic Stock Replenishment)	o	●	o	●	o	389
MBS IM (Manus Business Systems Inventory Management)	o	●	o	●	o	389
MBS OP (Manus Business Systems Order Processing)	o	●	●	o	o	390
MBS PO (Manus Business Systems Purchase Order Management)	o	●	o	●	o	391
MBS WD (Manus Business Systems Automotive Parts Warehouse Distributor System)	o	●	o	o	o	391
Order Eleven	o	●	o	o	o	393
Order Processing for Mailing List Rental	o	o	o	●	o	1238
ORDERS Wholesale Distributor System	o	●	●	o	o	397
Shelf	o	●	o	o	o	1413
TABS (Total Application for Building Suppliers)	o	●	o	o	o	224
VantagePoint	o	●	o	o	o	1414
Warehousing Systems	o	o	o	●	o	412
WHOLESALE-11	o	o	o	●	o	415
Wholesale Lumber Management	o	o	o	●	o	1244
Wholesale/Liquid Product Inventory	o	●	o	o	o	415
Wholesaler's Software System	o	●	o	o	o	416
Wine and Beverage Distribution System	o	o	o	●	o	417
XK-11	o	o	o	●	o	418
Word processing						
A-to-Z Word Processing	o	o	●	o	o	1368
ARCHON: ADMS (Association Data Management System)	o	●	o	o	o	797
BOS/Writer	o	o	o	o	o	1079
Clinical Data System Application Package and West Midlands RHA Blood Bank System	o	o	●	o	o	744
CPS Word Processing System	o	●	o	o	o	1082
CrossWord	o	o	o	o	o	1161
CT*OS Spelling Corrector	●	●	●	o	o	1370
CT*OS/IT*OS Word Processing	●	●	●	o	o	1083
CTS-300 DEType	o	o	o	o	o	1370
DECdx/RSTS	o	●	o	o	o	1280
DECdx/RSX	o	o	●	o	o	235
DEType Word Processing Application	o	o	o	o	o	1371
DECWORD/DP and DECWORD for Micro/RSTS	o	●	o	o	o	1085
DX/11M	o	o	●	o	o	1299
DX/RSTS	o	●	o	o	o	1299
Employment Agency	o	●	o	o	o	1170
Fundraiser	o	o	o	o	o	814
GALEN — Complete Medical Office System	o	o	o	●	o	754
GOV-11: Governmental Management System	o	●	●	●	o	658
IGOR Document Preparation System	o	o	●	●	●	1381
IND/DEV-11 (Industrial Development Management System)	o	o	o	o	o	1090
InterText™	o	o	o	o	o	1090
IS-LEM Word Processing System	o	o	●	o	o	1382
LABELS: The Mailing List System	o	●	o	o	o	1091
Legal Time and Accounting System	o	o	o	o	o	949
LEX-11	●	●	●	●	●	1092
Lyrix™ Word Processing System	o	o	o	o	●	1093
MACROCAT	o	o	o	o	o	1070
MACS-11 (Media Access and Conversion System for PDP-11)	o	o	o	●	o	241
MediCom®	o	o	o	o	●	770

	P/OS	R/ST/S	RSX	RT-11	ULTRIX-11	Page
Micro/RSX DECType	○	○	●	○	○	1384
NORTON (Astronomical Ephemeris Program Package)	○	●	○	○	○	1221
Officeman	○	●	●	○	○	1097
p-System™ Version IV.2.1	○	○	○	○	○	1130
PER-FORM™ (Personalized Form Letters)	○	●	○	○	○	1098
Plessey-WP (Plessey Word Processor)	○	○	●	●	○	1098
PRO/Applications Starter Kit for Diskette or Hard Disk	●	○	○	○	○	1164
PROOF: A Proofreading Program/Spelling Checker	○	○	○	●	○	1386
PRO/Office Workstation	●	○	○	○	○	1099
PROSE-PLUS	●	○	○	○	○	1387
PRO/Tool Kit	●	○	○	○	○	327
PS (Personal Secretary)	○	○	●	○	○	1100
Q-OFFICE	○	○	○	○	●	1103
Q-ONE	○	○	○	○	●	1103
QTEXT	○	●	●	●	○	1388
RCMMail: Mail Merge	○	○	○	○	○	1104
RSX-11M-PLUS DECType	○	○	●	○	○	1390
RUNOFF, Bonner Lab	○	○	○	●	○	1390
RUNOFF M02.4H for the Professional 300	○	○	○	○	○	1392
SATURN-WP™ Word Processing/List Processing	●	●	●	○	○	1394
SCRIPTORIUM II: Word/List Processing	○	●	●	●	○	1107
SPELL-11	○	○	○	○	○	1395
UniplexII Word Processor	○	○	○	○	○	1109
Vet System/2000	○	●	○	○	○	792
WCC CAT (Computer-Assisted Translation and Multilanguage WP System)	○	○	●	○	○	1074
WORD-11	●	●	●	○	○	1403
WORD-11® Encryption Option	○	○	○	○	○	1403
WORD: Document Spelling Checker/Corrector	○	○	○	○	○	1404
Word List Processing	○	○	○	●	○	1111
WordMARC Author™	●	○	○	○	○	1404
WordMARC Composer™	●	○	○	○	○	1405
X	○	●	●	○	○	1405
XWORD	○	●	○	○	○	1111

Product Title List

This alphabetical list of software product titles uses **bold type** to indicate products available through DIGITAL.

Product Name	Page
1040 Tax Planner	610
1040 Tax System	610
1040 Tax System	610
3-Dimension Tic-Tac-Toe	160
3277 Display Emulator for RSTS/E	1260
3780 COMBOARD™	1260
3D-Tic-Tac	160
6600 Plant Management System	978
8008.BAS and 8080.BAS	854
80/DS (PL/M-80) (Development System)	854
86/PC (PL/M-86) Compiler	854
A-CLASS	978
A-to-Z	1076
A-to-Z Business Graphics	672
A-to-Z Compu-Share™ Accounting Family Accounts Payable	4
A-to-Z Compu-Share™ Accounting Family Accounts Receivable	4
A-to-Z Compu-Share™ Accounting Family General Ledger	5
A-to-Z Compu-Share™ Accounting Family Inventory Control	6
A-to-Z Compu-Share™ Accounting Family Order Entry	6
A-to-Z Data Inquiry	796
A-to-Z Document Transfer (DECdx)	1261
A-to-Z Electronic Mail	1076
A-to-Z Integrated System	1077
A-to-Z Integration Kit	256
A-to-Z Supercomp-Twenty™	611
A-to-Z Word Processing	1368
AAAMIS (Advertising Agency's Accounting and Management Information System)	1230
AADC (Advanced Automated Data Collection)	979
ABACUS	430
Abax Depreciation System	7
Abax Mailing Label System	1077
Abax Rental Management System	1246
ABC	256
ABC (Automated Bank Control System)	612
ABC/Analyst	612
ABC/Equipment Data and Repair History System	1246
ABC/Financial Planning, Modeling, and Reporting System	613
ABC/Gas	422
ABC/GRAF	672
ABC/Inventory System	979
ABC/MM (Maintenance Management System)	548
ABCON (Automated Batch Control)	980

1610 Product Title List

Product Name	Page
ABC/PM Preventive Maintenance System	548
ABLE® Client Writeup System	8
ABS Accounting Software	8
ABSPAT (Absolute Binary Patch on RK Disk and DECtape)	257
AC Circuit Analysis Program	468
Academic Management Systems	430
ACCDIBS (Accountant DIBS — Turnkey)	364
ACCDIBSAP (Accountant DIBS Accounts Payable)	364
ACCDIBSAR (Accountant DIBS Accounts Receivable)	364
ACCDIBSGL (Accountant DIBS General Ledger)	365
ACCDIBSIO (Accountant DIBS Inventory and Order Entry)	365
ACCDIBSPR (Accountant DIBS Payroll)	366
ACCDIBSSA (Accountant DIBS Sales Analysis)	366
ACCES Network File Management Service	558
ACCES Network Virtual Terminal Service	1261
ACCES NPP (Network Protocol Package)	1261
Access Control	178
ACCESS Financial Systems	614
Access/BSC 3270	1262
Access/DIA	1263
Access/SNA 3270	1264
Access/SNA 3770	1264
Access/SNA 5250	1265
Access/SNA APPC	1265
ACCLOG: Task Accounting Package for RSX-11M Version 3.0	178
Accountant II Accounts Payable System	9
Accountant II Accounts Receivable System	9
Accountant II General Ledger System	10
Accountant II Inventory Control System	367
Accountant II Order Entry System	367
Accountant II Purchasing System	368
Accountant's Time and Billing System	10
Accounting	614
Accounting, Integrated	11
Accounts Payable	11
Accounts Payable	12
Accounts Payable	12
Accounts Payable	13
Accounts Payable	13
Accounts Payable	14
Accounts Payable	14
Accounts Payable	15
Accounts Payable	16
Accounts Payable	16
Accounts Payable	17
Accounts Payable	18
Accounts Payable	18
Accounts Payable and Cash Disbursements Package	19
Accounts Payable System	20
Accounts Payable System	20
Accounts Payables	21
Accounts Receivable	21
Accounts Receivable	22
Accounts Receivable	22
Accounts Receivable	22
Accounts Receivable	23
Accounts Receivable	23
Accounts Receivable	24
Accounts Receivable	25
Accounts Receivable	25

Product Name	Page
Accounts Receivable	26
Accounts Receivable and Statement Generation	27
Accounts Receivable Status	1180
Accounts Receivable System	28
Accounts Receivable/Billing	28
Accounts Receivables	29
ACCULINK™	1266
Action List	960
A/D (Fixed Assets and Depreciation), MCBA, Inc.	29
AdA — Advertising Agency System	1064
ADACS (Advanced Distributed Acquisition and Control System)	980
ADAM (Automated Dairy and Management)	150
ADCON (A/D Conversions) Package for Use with ADV11-C and K WV11-C	228
Additions to the Roger Williams College Collection	673
ADE/RSTS: Information Management for Office Professionals	1160
ADE/RSX	1160
ADF01/RSX Subroutine Library	228
ADIOM (Analog Digital Input/Output Modules)	558
ADLIB	981
Administrator 4/11	615
ADR/DATA™	796
ADT: A Debug Driver for RT-11 V4	257
Advanced Development Tool Kit	258
Adventure	160
AESOP (Aggregate Exception System for Mortgage Portfolios)	1194
AGGDISS	214
AGVS and ASRS Flexible Manufacturing Systems	981
Aide-De-Camp™ Software Engineering Environment	258
AIM (Automated Industrial Monitoring)	981
AIM (Automatic Inventory Management)	368
AIM Batch (Automated Industrial Monitoring)	982
AIM Benchmark — Suite I	179
AiM™ Payables	30
AiM™ Payroll — Interactive	31
AiM™ Receivables and Billing System	31
AIM/AP (Accounting Information Manager for Accounts Payable)	32
AIM/FOD (Accounting Information Manager for Fuel Oil Delivery)	368
AIM/PR (Accounting Information Manager for Payroll with Cost Accounting)	32
AIMS (Advanced Integrated Manufacturing Systems)	983
Airplane Landing Simulation Game	160
Airplane Landing Simulation Game for the Professional 300	161
AIS-PL/I Compiler	855
AISCorp. Medical Management Systems	734
ALGEB: A Language for Algebra and Number Theory	856
ALGOL for RT-11	856
Allen-Bradley Translator Software	983
ALP (Address List Processor)	1078
Alphabetical Directory Sort	559
AMS (Apparel Manufacturing System)	984
AMS (Asset Management Client Reporting System)	615
Amsterdam Compiler Kit	259
AnaTOLL	549
Anatomic Pathology	734
ANKOR	468
Any Databridge	1266
Any Master Network	1267
A/P (Accounts Payable)	33
A/P (Accounts Payable), MCBA, Inc.	33
Apartment Management System	1194
Apex Home Health Management System	735

1612 Product Title List

Product Name	Page
APL-11	857
APL-11 for RSTS/E	857
APL-11 for RT-11	858
APL-11 V1.0 for RT-11, Plus Other Software	559
Apparel Master™	369
APPGEN Accountants Client Write-Up	34
APPGEN Accounts Payable	35
APPGEN Accounts Receivable	35
APPGEN Applications Generator	259
APPGEN Fixed Assets	36
APPGEN General Ledger	37
APPGEN Inventory/Order Entry	369
APPGEN Job Cost	37
APPGEN Payroll	1168
APPGEN Professional Time Reporting	616
APPS/2 (Automatic Part Programming System, Version 2)	984
APR (Automated Production Reporting) System	422
APS (Accounts Payable System)	735
A/R (Accounts Receivable)	38
A/R (Accounts Receivable), MCBA, Inc.	38
Arabic PRO/Installation and Maintenance	1114
Arcade Game Package	161
ARCHON: ADMISS	430
ARCHON: ADMS (Association Data Management System)	797
ARCHON: BILLS	431
ARCHON: FRS (Financial Reporting System)	617
ARCHON: FUND-AL	797
ARCHON: PAY	1168
ARCHON: QDMS (Quodata Data Management System)	798
ARCHON: STUDENT	431
ARK — Magtape Archival and Backup Utility	560
Array Processor Support Under UNIX*	1114
ARSAP: Resource Management and Chargeback System	179
Arts	162
ASA PMS (Project Management System)	960
ASCII Driven Menu for RSTS/E	260
ASCII to EBCDIC or EBCDIC to ASCII String Translation (FNEBCASC)	229
ASDLOG (Automatic Searching for DIALOG Literature Search)	798
ASEA's DS-8/QDBC-11 Device Driver	180
ASM65 — Cross-Assembler for the 6502 Microprocessor	260
ASSIGN: IAS Logical Name Assignment	181
Athena Distributed Control System	549
ATHENA/graph™ Presentation Business Graphics	673
ATHENA/slide	674
ATOMS (Advanced Textile Operations Management Systems)	985
ATS (Active Task List Scan)	181
ATT (Automated Time and Attendance)	1169
Attendance	432
AUTO-BOP	985
AUTO-CHEM	468
AUTO-MET and Q-VAR	986
Automated Collection Management	1408
Automated Powder Diffraction Data Collection and Analysis	1208
Automated Voucher Payment System	735
Automatic Business Control System	370
Automotive Release Accounting	986
Automotive System	1418
AUTOPRO (Automatic Programming)	799
AutoTELEX	1268
AUTOVAX	858

Product Name	Page
AVID	433
AVL	859
AWRAP (Wire Wrapping for GD Fully Automatic Machines)	987
BACK/REST	560
BACKUP	561
BACKUP	561
BACOMP (Pseudocompiler for RT-11/BASIC)	859
Bacteriology Module: Leadership Series™	736
Banker's Credit Management System	617
Banking — General Applications	617
Bar-Coded Systems	800
BARCS	1180
BARON: Principal, Payment, Amortization, and Interest Information	618
Barter	1064
BAS (Budgetary Accounting System)	39
BASE/OE (Base Operating Environment)	800
BASEWAY Software	987
BASIC-11 Extension Routines	860
BASIC-11/RT-11	861
BASIC and FORTRAN Support Packages	469
BASIC Business Package	260
BASIC Demonstration Package	162
Basic Image-Processing System for CAT Scans	737
BASIC-L	861
BASIC, Pascal, PortaCalc, Kermit, and a Desk Top Calendar	261
BASIC-PLUS-2 for IAS	862
BASIC-PLUS-2 for RSTS/E	862
BASIC-PLUS-2 for RSX-11M and RSX-11M-PLUS	863
BASIC-PLUS System Dependency Flagger	229
BASIX	801
BASTOC™ (BASIC to C)	864
BASYS (Retail Banking System)	619
Battle Ships	162
BBASE: A Small Data Base Program	801
BCD Magtape Conversions	229
BCP (Barcode/Block Character Plotter)	674
BDARE: Dynamic-System Simulation in BASIC	469
Benchmark Monitor for RSX	181
BFTHK	469
BFX (Bulk File Transfer)	1268
BIGCAL: A Calendar Scheduling Program	1078
Bill of Materials	988
Billing and Accounts Receivable System	737
Blackjack for the MINC	163
BLAST® (Blocked Asynchronous Transmission)	1269
Blood Bank Module: Leadership Series™	737
BMOSS (Building Maintenance Operation Service System)	1181
BMUX: A Protocol Converter Program	1269
BNR Utilities	261
BOCS (Box Office Computer System)	163
BOMP (Bill of Material Processor), MCBA, Inc.	989
BONDJT	470
BOS/5 Operating System	1115
BOS/AutoClerk	261
BOS/AutoIndex	1079
BOS/MicroCobol	864
BOS/Planner	1079
BOS/Writer	1079
BOUSQ (Boussinesq)	470
BOXCUL (Box Culvert)	470

1614 Product Title List

Product Name	Page
BRG (Bearing Life Calculations)	471
Bridge/86	1080
BRLLP (Print-Out Braille Conversion Program)	1064
Broadcast Management	1065
BRUCE (Backup and Restore Utility with Consolidation and Enhancement)	562
BSC/DV (Binary Synchronous Communications Support)	1270
BSO/Assembler Microprocessor Relocating Assemblers	262
BSO/C Compiler	262
BSO/Com-1	1270
BSO/Debug Microprocessor Symbolic Debuggers	263
BSO/Fmtcnv (Format Conversion Program)	230
BSO/Mlib Microprocessor Program Librarian	263
BSO/Mlink Microprocessor Program Linker	264
BSO/Objcnv Format Conversion Program	230
BSO/Pascal Compiler	264
BSO/PLM Compiler	265
BSO/Tekld Tektronix Emulator Loading Program	1270
BT-II Voice Response Peripheral	1271
Buddy's Membership Dog Club Module	39
Budgetary Accounting	40
BUG: A Debugging Tool Used on Existing IAS Tasks	265
Builder (Homebuilders System)	214
Building/Energy Management System (Kernel) — System 600	550
BUPRES: A Program that Reads Individual Files from a Backup/Device Magtape ..	562
BURCOM (DIGITAL/Burroughs Communication System)	1271
Business Information System	619
C-11 Accounts Payable	40
C-11 Accounts Receivable	41
C-11 Fixed Assets	1195
C-11 General Ledger	41
C-11 Hospital Resource Management	738
C-11 Human Resource Management	1169
C-11 Integrated Accounting Package	42
C-11 Inventory	43
C-11 Inventory I	43
C-11 Job Cost	44
C-11 Materials Management	989
C-11 Mortgage Banking I	620
C-11 Mortgage Banking II	946
C-11 Payroll	44
C-11 Property Manager Tracking System	1195
C-11 Purchase Order Processing	45
C-11 Report Writer	620
C-11 Sales Order Processing	1230
C-CALC	621
C-Chart System — Medical Accounting, Inventory	738
C Cross-Compiler for National Semiconductor Series 32000	865
C-DASS (Computer Distribution and Storage System)	990
C EXECUTIVE, Release 2.0	1115
C Language System (Binary Version) for the Professional 300	865
C Language System for RT-11 (Binary Version)	866
C Language System in RT-11 Format	866
C Language System, Second Master Release	867
C Language System with Native Toolkit	868
C Native and Cross-Compilers	868
C Test Suite	868
C300	471
C301A	472
C301B	472
C302	473

Product Name	Page
C303	474
C68	869
CACHE-11M/PLUS	182
CADA-1983 (Computer-Assisted Data Analysis Monitor)	433
CADBIRD II	474
CADO2C (Conversion Package for CADOL Software)	231
CAI (Computer-Assisted Instruction Package)	434
CAIRS (Computer-Assisted Information Retrieval Systems)	801
CAIRS Government Document Librarian	654
CAIRS Medical Librarian	739
CAIRS Special Librarian	954
CALC-11/CALC-11 PLUS	621
CALC (Accounting Calculator), Version II	1080
CALC: An Interactive Computer Language with Unlimited Numerical Precision	1208
CalComp Host Computer Basic Software (On Line/Off Line)	675
CALDGN (CalComp to Design File) Interface Library	675
CALEND: A Calendar Program	164
Calendar Printing	164
Call Tracker	1231
CALOUT	1272
CALOUT/CONTRL	1272
CALSIF (CalComp to Standard Interchange Format) Interface Library	676
CAM-TECH	990
CAMAC Support Library for Industrial Systems	266
CAMIC (Computer-Aided Microprocessing)	266
CAMIS (Consultants' Accounting and Management Information System)	961
Campaign Finance Program	654
CAMPUS (Campus Planning Package)	434
CAMS (Computerized Arrhythmia Monitoring System)	740
Canadian Mortgage Calculation Program	622
CAPS	740
CAPS — Section Properties Program	475
Cardware Disk Subsystem	1161
CARE/DM	741
CARS (Computer Audit Retrieval System)	183
CAS (Comprehensive Accounting System)	45
CAS.1 (General Ledger)	46
CAS.2 (Accounts Payable)	47
CAS.3 (Accounts Receivable)	48
CAS.4 (Payroll)	49
CAS.5 (Inventory Management)	49
CAS.6 (Order Entry/Invoicing)	50
CAS.7 (Purchase Order)	50
CAS.8 (Sales Analysis)	51
CASANOVA (Computer-Assisted Instruction in Analysis of Variance)	435
CAST* (Computer-Assisted Self-Training)	435
Casting Costing, Pricing, and Profit Analysis	962
Caswell Model (Apprehend)	1418
CB—User Communication Utility	1273
CBUMP — Automotive Bumper Dynamic Impact	475
CCSI-PLOT*	676
CD: An RT-11 Device Driver for the DR-11W	1273
CDDRV (Cached Pseudo Disk CD)	1274
CDIG — Graphics Digitizing Program	476
CDL2 Compiler	870
CDOC — C Source Code Format Utility	267
CDPACK: Interface Routines for DR-11W	1274
CELLO — A Cell Organization Utility	677
Cephes Math Function Library	476
CFMS (Computerized Forms Management System)	1081

1616 Product Title List

Product Name	Page
Chanel	477
CHARGER	742
Chariot	51
CHART: Bar Charts	678
Checker	742
CHEM-COST	991
Chess Ingenuity®	164
CHIPS	371
Choose	165
CHRIS (CISCO Hotel and Resort Information Systems)	1247
CHROM (Chromatography Graphics and Analysis)	1208
CHROMPAK (Chromatography Analysis Package)	1209
Chronometrix	962
CHSMOV — Chess-Move Recorder on a VT55 or a VT105, Under MACRO-11	165
CHSSLV (Chess-Problem Solver)	166
CIMCO Interactive APT (Automated Program Tools)	991
Circuits	478
Circulation Management	1065
CIT101: Routines to Drive the CIT101 and VT100 Terminals	267
Civil Library	478
CLASS — Education Accounts Payable A/P System	436
CLASS — Education Admission System	436
CLASS — Education Alumni/Development System	437
CLASS — Education Billing and Receivables System	437
CLASS — Education Personnel System	438
CLASS — Education Registration System	438
CLASS — Educational Financial Aid System	438
CLASS — Educational Financial System	439
CLASS — Educational Payroll System	439
CLASS — IMPRS	439
CLASS (College-Level Administrative Software System)	440
CLE and BCE: Command Line Editors for RSX-11M	1368
CLE: Command Line Editing and Storage Utility for RSX-11M	1368
CLENS — Automotive Head Lamp Design Code	479
Client Accounting	52
Client Write-Up	52
Clientrac™	479
CLIN-TEAMS®	1210
CLIN-TEAMS®/Remote	743
Clini-CAL® Laboratory Information System	743
Clinical Data System Application Package and West Midlands RHA Blood Bank System	744
Clinical Support Systems: Leadership Series™	744
CLIP (Command Language Interpreter)	268
Clock Generator	183
Clothier	1408
Clover Personal Income Tax Package	53
CLUE™ (C (Source Level) Linecount Utility)	268
CMI PROFIT	992
CMIS (Mental Health Management Information System)	745
CMMS (Comprehensive Maintenance Management System)	550
CMODEL — Finite Element Model Builder	480
CMR11/CMV11 Software Driver	1274
CMR21 Host Utility	993
CMS-11 (Circulation Management System)	1066
CMS (Cable Television Management System)	1066
Co-Idris™ Operating System	1116
CO-LAB	745
COBEX-11	269
COBOL	871

Product Name	Page
COBOL-81/RSTS/E	871
COBOL-81/RSX	872
COBOL-Plus	873
Cobra	214
CODE (Computer-Oriented Drafting Equivalent)	678
COGO (Coordinate Geometry)	481
Collaborative Clinic System	746
Collection of California U.S. Forest Service Software	183
Collection-Plus	623
COLOR (Color Consultants Information System)	1247
Color Trend Plot — System 600	679
COLTS (Computerized On-Line Transportation System)	1418
COM: An RT/VMS Communications Package	1275
COMADS (Computer-Aided Dispatching)	215
COMIT (Communications Management Information Tool)	1181
ComLINK: Remote Communications Enhancement	1275
COMM IOP-DUP	1276
COMM IOP-DZ	1277
Commercial Loan System	623
Commercial Property Management	1195
Commercial/Residential Property Management	1196
COMPAG	1369
COMPAG: Combine Pages for the Professional 300	1369
COMPCARE (Comprehensive Care Centers)	746
Compendium of (DECAL) CAI Programs	440
Complete Accounting Package	54
Complete File Sort Utility	563
COMPOSE: VT200 Custom Character Set Generator Program	1369
Comprehensive Blood Bank System	746
COMPU-CHART — Medical Records Program for Long-Term-Care Facilities	747
COMPU-TRIEVE — Report Writer and Data Manager	747
Computer Byte or Word Checker	231
Computer Guided Probe — Electronic Fault Isolation Package	482
CON: A Program to Make a File Contiguous on a Files-11 Disk	563
Concept Capacity Planning	993
Concept Data Base Control — Operations	994
Concept Data Base Control — Materials	995
Concept Inventory Management	995
Concept Material Requirements Planning	996
Concept Product Costing — Materials	996
Concept Product Costing — Operations	997
Concept Purchase Order Control	997
Concept Works Order Control — Materials	997
Concept Works Order Control — Operations	998
CONEFR.BAS (Cone Frustrum Layout)	482
Cones	483
Conflict of Interest	946
CONPAX	232
Constructimate	215
Contractor Cost Accounting System	216
Contractor Management System	216
CONTRL	184
ConTrol — Materials Management Information System	748
Control C Trap Handler for FORTRAN	873
Convert Tape Utility	232
Converter-22	1278
COORD	483
COP (Customer Order Processing), MCBA, Inc.	998
COPSY	563
CopyCalc	54

1618 Product Title List

Product Name	Page
CORAL 66	874
Corgraph	679
Cortex Desk Set™	1082
COSAP	441
COSAP™ (Con conversationally Oriented Statistical Analysis Package)	484
COSAS (Comprehensive On-Line Student Accounting System)	441
Cost Estimating	1232
Country Club Accounts Receivable	166
Country Club Golf Handicapping System	166
Country Club Payroll System	166
County Treasurer's Investment Management	624
Court Club Management System	1248
CP-11 Coupon Redemption System	1232
CPA Payroll	55
CPA Time and Billing	55
CPCS-I (WECON Computer Process Control System)	999
CPLIB	269
CPLOT — Graphics Plotter Program	484
CP/M-86® for DIGITAL	1116
CPM (Critical Path Method)	217
CPMRSX: CP/M® to DIGITAL Disk Translator for RSX-11M	564
CPOST — Postplotter for Finite Element Output	485
CPS Graphics Package	680
CPS Word Processing System	1082
CRAFT (Copperweld Robotics ASCII Format Translator)	564
Credit Authorization	1408
CROSS: A Cross-Referencer for BASIC Programs	270
Cross-Assemblers	270
CrossWord	1161
CRPLT	485
CSEAT — Seat Frame Analysis Code	486
Csharp Realtime Toolkit	271
CSI Accounts Payable	56
CSI Business System	56
CSI General Ledger	56
CSI Payroll	57
CSM/O/P (Continuous System Modeling and Optimizing Program)	486
CT*OS Spelling Corrector	1370
CT*OS/IT*OS Word Processing	1083
CTS-11 Software Driver for RSX-11M	1278
CTS-300	1117
CTS-300 DECType	1370
CTS-300 ISAM FCG Utilities	564
CTS-300 RDCP (2780/3780)	1279
Culinary Operations Information System	1248
Customer Order Processing	371
Customer Service Inquiry System	1182
CUSYS (Credit Union System)	624
CUX: A Virtual Terminal Program	1279
CVLLIB: General-Purpose Library for RT-MACRO and FORTRAN for the Professional	271
CVLLIB: General-Purpose RT-11 Library	272
Cybergraphic Integrated Software	1067
Cycles	167
D™	802
D16 and ROTA Programs for GAMMA-11	749
DACMS (Distribution and Cash Management System)	372
DACON: D/A Conversions Package for Use with AAV11-C and KWV11-C	233
DACSORT: FORTRAN-Callable Subroutine	565
DAIRY-MAN Dairy Herd Management System	150

Product Name	Page
DAREP (Differential Analyzer Replacement — Portable), DARE/11	487
DATA BASE: A Rudimentary Data Base Generator	803
Data Base Management Package	803
Data Base Management Package, Binary Kit Only, for the Professional 300	803
Data Base Management Package, Source Only, for the Professional 300	804
Data Boss/4	804
Data Entry Interface to Remote Hand-Held Computer	1280
Data I/O PROM Programmer Software and Utility Program	272
DATA-LOCK®	233
Data*Model Spreadsheet Management System	625
Data Search	1371
DataCalc	625
DataCare	749
DATAIN	1210
DATAMAT	805
DATATRIEVE-11	805
DATATRIEVE-11/IAS	806
DATE	184
Date*Book	1083
DATMAN (BASIC Data Manipulation Package)	807
DATS	680
Daymark Wholesale Distribution System	372
DB*SCAN	234
DBL (Data Business Language)	874
DBMS-11	807
DBSMNG: Small Data Base Management Package Binary Kit	565
DCW Menu for RSTS/E Systems	272
DDC/PPCL Compiler — System 600	875
DDM-11 (Due-Date Monitor)	963
DDP APS (Accounts Payable System)	57
DDP ICSF (Inventory Control System)	58
DDP OEIF (Order Entry/Invoicing)	58
DDP PAR (Accounts Receivable)	59
DDP PAS (General Ledger)	59
DDP PAY (Payroll System)	60
DDP PCSF (Purchasing Control System)	61
DDT: A Symbolic Debugger for P/OS	273
DDT22: Virtual Debugger and Systems Package	273
DEBUG/RT (Debugger)	274
DECAL (Digital Equipment Corporation Author Language)	442
DECCOD2	234
DECdataway Intelligent Subsystem	1280
DECdx/RSTS	1280
DECdx/RSX	235
Decision Tree	626
DECmail-11	1084
DECmail™-PLUS	1085
DECnet-11M-PLUS: RSX-11M-PLUS Network Software	1281
DECnet-11M: RSX-11M Network Software	1282
DECnet-11S: RSX-11S Network Software	1283
DECnet-IAS	1284
DECnet-Micro/RSX	1284
DECnet Router Server	1285
DECnet-RT	1286
DECnet/E	1287
DECnet/SNA RSX 3270 Terminal Emulator	1287
DECnet/SNA RSX Application Interface	1288
DECnet/SNA RSX Remote Job Entry	1289
DECODE3 — RT-11 SAV/LDA Files Disassembler	235
DECODE4: RT-11 SAV Files Disassembler	235

1620 Product Title List

Product Name	Page
DEctalk Application Support Library	274
DEctap Manufacturing System	1000
DEctap Tailored Application Programs: Wholesale System	373
DEctype Word Processing Application	1371
DECWORD/DP and DECWORD for Micro/RSTS	1085
DEEP (Data Entry and Editing Package)	1372
Demonstrator	808
Depreciation Schedule	61
Depreciation System	627
Des BASIC (BASIC Cross-Compiler)	875
Des C (C Cross-Compiler)	876
Des Pascal (Pascal Cross-Compiler)	876
DESCTOP (Direct Executing Scientific Computation and Operating Package)	488
Design Graphix™	489
DESIRE (Direct-Executing Simulation in Real Time)	489
DFI/FMS (Dealer Finance and Insurance/Forms Management System)	1419
DFL: A Program to Dump Physical Blocks from Floppy Disk	565
DFM (Dental Financial Manager)	750
DFRS (Donor Fund Raising System)	808
DFWFT (Discrete Fast Walsh-Fourier Transform) Subroutine	236
DIALBACK	1289
DIALUP	1290
Dialysis Clinic Billing	750
DIBOL ACCEPT/DISPLAY Subroutines	877
DIBOL Collection	275
DIBOL Communications Package	1291
DIBOL String-Interpreting Subroutines	877
DIBOL Subroutines	275
DIBOL Translator	877
DIBS-11	62
DIBS-11 Order Entry/Inventory Management for CTS-300	62
DIBS-11 Order Entry/Inventory Management for RSTS/E	63
DIBS-11/CTS-300	63
DIBS-11/UK	374
Dictionary with Phonetics	1372
DID-X.25	1291
Dietary Scheduling System	751
DIGICALC™	627
DIGICOMM-11	1291
DIGIPORT	1292
Digital Clock	185
DIGLIB	681
Direct Marketing and Mail Order Management System	1233
DIRECTORY: List Disk Directories	566
DISASM.BAS MACRO Disassembler	878
DISASO: Object Module Disassembler	878
Diskdoctor: Disk Recovery Service	185
DISKIT	1117
DISKMT, VARASC, and DOSRT: Programs for Reading and Writing Magnetic Tapes	566
DISKTEST	567
Dispatch	1248
Distribusyst (Distribution Management System)	374
Distribution — Wholesale and Retail	375
Distribution Management System	375
Distribution System (Wholesale/Retail)	376
DLOAD	490
DMG/FLOW	681
DMG/NET	1293
DMIS (Doctors' Medical Information System)	751

Product Name	Page
DMS-500 (Data Management Services)	276
DN-11 Device Driver for RSX-11	1293
DN-11 Driver for RSTS/E Version 7.0	1294
DNC-11 (Direct Numerical Control Package)	1000
DOC	1373
DOC: Document Output Program	1373
Docket/Calendar System	946
Doctor Billing	751
Documentor/F	1373
DocuSearch Full-Text Retrieval System	1374
Dog License System	655
Dolphin® Curricula	442
DOPTER	567
DOSRES (Quantal Dose-Response Analysis)	752
DOVETAIL JOM (Job-Oriented Manufacturer)	1001
Dovetail Journal Publisher	1067
DOVETAIL MRP (Materials Requirement Planner)	1001
DOVETAIL Wholesale Distributor	376
DPH: File Header Dump Program	568
DPM (Distributed Plant Management)	1294
DPM (Dyeing Process Management)	1002
DPM-PLUS (Distributed Plant Management)	1295
DR11-A/C Loadable Driver with Build Package	1296
Drawing Register	682
Dreams	1086
DRS	809
DRU11-C RSX-11 Driver	1296
DRWLIB	683
DRX11-C/RSX Driver	1297
DSKBLD (RSTS/E Disk-to-Disk Utility)	568
DSKCHK: A Program to Check Space on Disks	568
DSKLIB: A Disk Librarian Utility Program	569
DSM-11	1118
DSM-11 Translator	879
DT07-11M/M-PLUS	1297
DTC (Desk Top Calendar)	1087
DTLIB	276
DTRO BOMP (Bill of Materials Processor) System	377
DTRO CDMS (Comprehensive Distribution Management System)	377
DTRO Forecasting System	1233
DTRO Inventory Management System	378
DTRO Order Processing System	379
DTRO Purchasing System	380
DTX: A Utility for Transferring Text Files and Absolute Binary Images	569
Dual-Processor RT-11 System	1118
DUCTSYS — HVAC Ductwork and Fittings Drawing System	683
Due-Date Monitoring	64
Dungeon	167
Dungeon for RT-11	168
DUPLEX — Serial Communication Between Computers	1298
Duty Cycling — System 600	551
Duxbury Braille Translator	1068
DV11/3271 Driver for RSX-11M V3.0	1298
DX/11M	1299
DXEBS: Floppy Disk Utility	569
DX/RSTS	1299
Dynamic Systems Account Manager	185
DYNAMO	879
DYNPRI	186
E Z Chart	684

1622 Product Title List

Product Name	Page
EasyEntry Forms Management and Data Entry System	277
Easypost Insurance Agency Management System	846
ECAP	490
ED	1374
EDCMD: Command Line Editor and Command Line Recall	1374
EDIGRAF — Batch Edit for Intergraph Design Files	684
EDMACS: A Screen Editor Program	1375
EDPC Utilities Package	570
ELAN-AC	491
ELAN-MOD (Transistor and Diode Modeling Program)	492
ELAN-TR (Transient Radiation)	492
Elbow	493
Electrical Contracting	1182
Electrical Repair and Paging	1183
Electronic Component Distribution System	380
Elliptic Integrals and Functions	1211
EMDA's Super Car Rental and Control System	1419
EMIS (Equipment Management Information System)	1420
Employment Agency	1170
Enforcer I™	278
ENGDRL (English Drill) Package	443
Engineering Science Program Exchange	443
Enterprise Distribution	381
Episodic Billing System	752
EPOS (Engineering- and Project Management-Oriented Support System)	810
EPR (Electron Paramagnetic Resonance) Package	236
EPS (Electronic Publishing System)	811
epsitool	1375
epsitool:assemble	278
EQUINOX™	1003
Equipment Cost	218
EQUUS-11	151
ERDAS Image Processing and Geographic Information System	423
ES-LOG	424
Estimating System	218
ETAKE 2 (Estimating, Takeoff, and Pricing System)	219
Ethernet Terminal Server	1300
ETHERWAY™	1301
EUBA (Electrical Utility Billing and Accounting)	1183
European MINC Package #1 — Utilities	571
European MINC Package #2 — Lab Management	753
European MINC Package #3 — Data Acquisition	237
European MINC Package #4 — Plotters	685
European MINC Package #5 — Data Analysis	1211
European MINC Package #6 — Communication	1301
European MINC Package #7 — Instruments	493
European MINC Package #8 — Games	168
EVANAC — Project Accounting System	186
Everhart/Hoffing RSX Collection	1119
Everts Accounting Systems	64
EVOKE	753
EXDOC (Export Documentation System)	381
EXECmail	1087
Executive Information and Action Screen	963
EXFILE (Exchange File Program)	1302
EXOS 8031 (Excelan Open Architecture Systems)	1302
EXOS 8032 (Excelan Open Architecture Systems)	1303
EXP1234 (Exponential Model Fitter)	494
EXPAND	880
Export Package	382

Product Name	Page
Extension Routines for MU BASIC	880
EXTMT: A General-Purpose Magnetic Tape Handler	571
EZ Chart	685
F*I*R*E Report Writer	812
FACS—Accounts Payable	65
FACS—Accounts Receivable/Sales Analysis	65
FACS—Fixed Asset Management	66
FACS—General Ledger/Job Costing	67
FACS—Inventory and Order Entry	382
FACS—Job Costing	219
FACS—Job Order System	383
FACS—Newspaper Circulation and Accounts Receivable	1068
FACS—Patronage Accounting	628
FACS—Payroll	67
FACS (Flexible Automated Collection System)	1088
FACTS V Systems of Tire Control	628
FALCON Application for RT-11	572
Fast Fourier Transform and Two Applications	237
Fast Fourier Transform Routine	880
FAST Subroutines for Performing Block I/O Under Files-11	572
FCI Building and Zoning System	655
FCI Fire System	656
FCI Personnel System	657
FCI Police System	657
FCP (FORTRAN Code Preprocessors)	881
FDT (FORTRAN Debugging Tool)	279
FEED—MAN Feed Analyzer	152
FEED—MAN Ration Preparation	152
FEP2: A Finite Element Program for 2- and Axisymmetric 3-Dimensional Continua	1212
FPCM Software Tools Kit	279
FETCH.B: An Editor in MU BASIC	1376
FIFO: FIFO Inventory	68
FILDMP: File Dump Utility and Object Module Cracker	280
File Management Utility, Version 2.3	573
File Manipulation Commands	573
File Transfer System	573
File Utility Programs for MU BASIC/RT-11	574
FILEDT	1376
Files	574
FILETAB-D	280
FILTRA (File Transfer Program)	575
FINAID	444
FINAL	629
FINAL (Financial Analysis)	629
FINAR (Financial Analysis and Reporting System)	630
FINCON (Financial Control System)	1004
FINESSE	630
FINGRAPH	686
FINPRO (Financial Projection Model)	631
Fiscal Accounting	68
FISH: Post- and Interspike Interval Analysis	1212
FITPACK Curve and Surface Fitting Package	1212
Fixed Asset Accounting	69
Fixed-Asset Control	551
Fixed Asset Depreciation	70
Fixed Assets	70
Fixed Assets	71
Fixed Assets	72
Fixed Assets and Depreciation	72
FIXIT: BASIC Translator	881

1624 Product Title List

Product Name	Page
FLECS (FORTRAN Language with Extended Control Structures)	882
FLEET™	1420
Flexware Accounting Package	73
Flexware Accounts Payable	74
Flexware Accounts Receivable	74
Flexware Application Development System	281
Flexware General Ledger	75
Flexware Inventory Control	76
Flexware Job Costing	631
Flexware Order Processing	76
Flexware Payroll	77
Flexware Purchasing	78
Flexware Sales Analysis	1234
Flexware Spreadsheet	78
FLGTHK	494
FLIC	494
Flight Watch	1421
FLIP: A Computer Program for Fuzzy Reasoning	168
Floating-Point and Math Package LSI-FPP	282
Flock Modeling and Egg Production Forecasting	153
FLUTE: Floppy Disk Ownership Arbitration Utility	187
FMRP (Full Material Requirements Planning)	1004
FMS-11/IAS	812
FMS-11/RSTS	813
FMS-11/RSX	1377
FMS-11/RT-11	1378
FMS (Facility Management System)	551
FMS (Fleet Management System)	1184
FOCAL RT	882
FODT (FORTRAN IV On-Line Debugging Tool for RSX-11)	282
FODT (FORTRAN IV On-Line Debugging Tool for RT-11)	282
FODT: FORTRAN-IV On-Line Debugging Tool for RT-11 for the Professional 300	282
Forced Closed Accounts	632
Form Driver	283
FORMAT: DEctape Formatter for RT-11	576
FORMAT (Forms Management Transaction System), Version 5.1	283
Format International Feed Formulation Systems	153
FORMATIX	814
Forms-Control Simulation for DECwriters and Teletypes	1379
FORODT: FORTRAN Debug Routine for RT-11	284
FORSIM	495
FORTH: Programming System	1213
FORTRAN-77 and BASIC Runtime Units	284
FORTRAN-77 Compiler	883
FORTRAN-77 DEBUG/RSX, RSTS/E, IAS	883
FORTRAN-77/IAS	883
FORTRAN-77/RSTS/E	884
FORTRAN-77/RSX	885
FORTRAN-77/RT-11	886
FORTRAN-Callable Subroutines Package for Fast Continuous A/D on the MINC	238
FORTRAN Development Library	285
FORTRAN Graphics Support for the VT105	686
FORTRAN Interface to IAS Subtasking	886
FORTRAN IV-PLUS and FORTRAN-77 On-Line Debugger	285
FORTRAN IV/IAS	887
FORTRAN IV/RSTS/E	887
FORTRAN IV/RSX	888
FORTRAN IV/RT-11	889
FORTRAN/RT-11 Laboratory Extension	238
FORTRAN/RT-11 Plotting System for the IEEE-488 HP-9872S Plotter	687

Product Name	Page
FORTRIX-C (FORTRAN to C Translator)	889
FPAC/DPAC Floating-Point Library	285
FPS (Fruit Packing System)	154
FPS (Fundamental Plotting Subroutines)	496
FPS80	633
Framer	1379
Freight Forwarder System	383
FSG (Financial Statement Generator)	79
FSORT3	576
FTALK	1303
FTP (TCP/IP File Transfer Program)	1304
FTU (File Transfer Utility)	576
FTX Funds Transfer System	633
Fuel Company System	384
Fuel Oil Accounting/Delivery Scheduling	384
Functional Subroutines	496
Fundraiser	814
FUSION™	1304
FUTURETECH — Mail Order Processing System	1235
G-Post (Generalized Postprocessor)	1005
GAB (General Program for the Analysis of Biopotentials)	1214
GALEN — Complete Medical Office System	754
GAM (Graphic Access Method)	687
Games, Puzzles, and Recreation-1	169
Games, Puzzles, and Recreation-2	169
GAMKED and CURKED: Programs for Editing GAMMA-11 and CURVE Macros	1379
Gamma Spectroscopy Applications Package	1214
Gasket	497
GBMS (General Business Management System)	815
GBS (Genesys Banking System)	634
GCIS (Group Corporate Information System)	815
GDL (Graphic Display Library)	688
Gear	688
GEARW	497
General Ledger	79
General Ledger	80
General Ledger	80
General Ledger	81
General Ledger	81
General Ledger	82
General Ledger	82
General Ledger	83
General Ledger	84
General Ledger	84
General Ledger	85
General Ledger	634
General Ledger	947
General Ledger and Financial Reporting	85
General Ledger and Financial Reporting	86
General Ledger, Budgeting, and Checkwriter	635
General Ledger System	87
General Ledger System	1184
General-Purpose Data Base Package	816
GENESYS	635
GENLOG: Shareable Data Logging Package	239
GENPLT	689
Genral: The Great War Game	169
GENSIM-IMPRS Financial Simulator	635
GETBIN: Change a Paper Tape Binary Program to an RSX-11M Bootstrappable Task	577

1626 Product Title List

Product Name	Page
GIGI CAI Primer	689
GIGI Software	689
GIGIC2: GIGI Graphics Printout on a Low-Priced C-ITOH Printer	690
GIMS (Government Information Management System)	658
GINO	691
GINTRAN (Graphics Input and Transformation)	691
GIS* (Guidance Information System)*	444
GKS-GRAL	692
GKS/C	692
GL Eleven	87
G/L (General Ledger)	88
G/L (General Ledger), MCBA, Inc.	88
GLIM-3	1215
GLS (General Ledger System)	754
Golf League Records	170
GOULD/DEC Data Link	1305
GOV-11: Governmental Management System	658
Government-11	659
Government Payroll System	659
GPIB Software	286
GPR (Graphics Plotting Routines)	693
GPUC (General-Purpose User Command Package)	497
Grade Book	445
Grade Reporting	445
GRADES: A Program to Facilitate the Administrative Aspect of Grading	446
GRADES: Course Management Program	446
GRADES (Grading, Recording, and Analyzing Diverse Evaluations of Students) ..	446
Grant Clock Tasks	188
Graph Package	693
Graphix-11™	1088
GRASP: Graphics Applications Processor	694
Grid	498
Group Health and Life Insurance	846
Group Purchasing System	754
GROUSE Ground Modeling System	498
GS-400 Circulation Control System	954
GSE-11	286
GSYS.BAS: System Management Utility	1119
GTSC 306A Calendar	188
GVS/File	1306
H-BOMM	1005
H-BUY	1006
H-CHAMP	1120
H-MAKE	1007
H-MRP	1008
H-PLAN/M	1008
H-STORE	1009
Hammer	499
HASP	1306
HASP COMBOARD™	1307
HASP + RSX-11M/RSX-11M-PLUS Interconnect Software	1307
HASP + RT-11 and TSX-PLUS Interconnect Software	1308
HATCH — Crosshatching	694
HBOLTS	499
HBS Nursing Home Management Information System	755
HCGS	694
HCGS (Host Computer Graphics Software)	695
HC.MAC — A Handler that Converts a Second Terminal into a Line Printer	1380
HCR/BASIC	890
HCR/EDIT	1380

Product Name	Page
HCR/Pascal	890
HDC + (Hospital Data Communication)	755
HDS/II (Healthcare Data Systems)	756
Healthcare	756
HEC 1: Runoff Hydrographs	500
HEC 2: Backwater Profiles	500
HEX: Hex File Editor	577
HIDE (Hidden Line Removal/Plotting Subprogram)	695
HIMS (Hospitality Information Management System)	1249
HIS (Hospital Information System)	757
Hockey Game	170
HOL77 Precompiler for DIGITAL's FORTRAN-77	891
Holes	501
Home Health Management	757
HomeRange	154
Hoop	501
Hornet: A Star-Trek Game	170
Hospital Accounting and Management System	758
Hospital Laboratory System	758
Hospitality Management System	1249
HOST-AGV (Host-Automated Guided Vehicles)	1010
Housing Authority — Section 8	1196
Housing Authority Tenant Accounting	1197
HP-7225A HP-GL Pen Plotter Library	696
HP-9872 Plotting Package for Use with MINCs	696
HPLOT.BAS: Hewlett-Packard 7202A Graphics Plotter Programs	696
HP.SYS: Hewlett-Packard 7470A Plotter Handler	1308
HR&OD (Human Resource & Organization Development)	1170
HSULF (Hydrogen Sulfide)	501
HTP (Hemodynamic Tracking Profile)	759
I*S*P* (Interactive Signal Processor)	502
IAS (Interactive Application System)	1121
IAS MAIL	1121
IAS105: VT105 FORTRAN Graphics Package for IAS	697
IAS/2780 Protocol Emulator	1309
IB Graph	1089
IBM 2780/3780	1310
IBM 3270	1310
IBM HASP	1310
IBM-SDLC/HDLC-UNC	1311
IBMmv/DECnet Gateway	1311
IBV-11A FORTRAN Support Package	1312
ICAMS (Inventory Control and Management System)	385
I/CAP (Interactive Electronic Circuit Analysis Program)	503
ICAS 1123-Plus (Inventory Control Accounting System)	1409
ICLAYOUT	503
ICONS (Integrated Construction System)	220
Idaho Falls Payroll System	89
Identopick	385
IDL (Interactive Data Language)	1216
Idris™ Operating System	1122
IEC11-M	1312
IEX-RSX-Driver	1313
IEX-RT-Handler	1313
IF-11/3780	1314
IF-11/HDLC-X.25 Link-Level Software	1314
IF-11/X.25 Packet-Switched Network Firmware	1315
IF-11/X.25 PLUS PAD Software and Firmware	1315
IFAS (Interactive Financial Accounting System)	89
IFTRAN Precompiler for PDP-11 FORTRAN	891

1628 Product Title List

Product Name	Page
IGOR 1 (Interactive Graphic Operating Resource)	697
IGOR Document Preparation System	1381
IIAS (Independent Insurance Agency Accounting System)	847
I/LOGIC (Interactive Logic Simulation)	504
ILS (Interactive Laboratory System)™	505
ILSA (Installment Loan Service Accounting)	1197
ILS/SKY	505
I/M (Inventory Management), MCBA, Inc.	1010
IMAGES II +	698
IMCS (Interactive Manufacturing Control Systems)	1011
Impact	1235
IMPCON-FMS	90
IMPCON (Inventory Management and Production Control System)	1012
IMPRS	816
IMS-8 (Integrated Mill-Management System-8)	155
IMSL Library	506
IN-TOUCH™	1409
IND/DEV-11 (Industrial Development Management System)	1090
INDENT (Initial Data Entry)	816
INDENT/BASIC-PLUS-2 Programming Templates	287
Independent Laboratory System	759
INDEX: FORTRAN Cross-Referencer	892
INDEX: FORTRAN Cross-Referencer	892
INFOTEX	1381
INMAGIC	817
Innkeepers Management System	1250
INRAN, OUTRAN: Computerized Question Generation #2	447
Instrument Bus Subroutines	1316
Insurance Agency (Casualty)	847
Insurance Agency Package	848
Insurance Business System™	848
Integrated Business Software	90
Integrated Inventory Management System	636
Integrated Manufacturing and Financial System, Version 4.0	1012
InterAP™	91
Intercomputer File Transfer Program	1316
INTEREST (Interactive Estimating)	220
InterFad™	637
InterGL™	92
International Trade Software	1410
InterText™	1090
InterUpt (ISM Universal Programming Tool)	287
InteRx™	760
INTFIN (Internal Financing Package)	638
intRlab	761
INTRST.PKG	638
INVENT: Inventory for Manufacturing Companies	1013
Inventory	93
Inventory	386
Inventory	386
Inventory Control	387
Inventory Control	388
Inventory Control	1014
Inventory Management	1014
INVSIM (Inventory Simulation)	818
IOI: Order Entry	93
IP11 Industrial I/O Subsystem Software Driver	1316
IPACS (Interactive Pattern Analysis and Classification System)	1216
IRIS-MINI	577
IS-LEM Word Processing System	1382

Product Name	Page
ISAM Subroutines Library	578
ISAS (Interactive Student Accounting System)	447
ISIS 80 Continuous System Simulation Program	288
ISL (Interactive Simulation Language)	507
ISMDDF (ISAM to DIBOL Data File Utility)	578
ITEX/Q	239
IUC (Interactive Unit Commitment)	507
IV-11 Inventory Control System	221
IXV-11/RSX Driver	1317
J/C (Job Costing), MCBA, Inc.	1015
JMI Portable C Library	893
Job Cost	221
Job Cost Accounting	818
Job Costing	94
Job Costing	222
Job Costing	1015
Job Shop Management	1251
JOBDMP/JOBDSP — Job Core Image Dumper	188
JSI/MIS (John Snow, Inc./Medical Information System)	762
KB Handler	1317
KBSET: System Start-Up for RSTS/E	189
KDSS (Key-to-Disk Data Entry System)	189
KEREN	1069
Kermit-11	1318
Kermit and CPMUG Grab Bag	1318
Key Conversational Planning System	964
KEYWORD Information Manager	819
KMC11 Tools	289
KMS11 RSX X.25 LAPB Link-Level Software	1319
KM.SYS — Device Driver for Konelar Extended Memory	289
KMV11-A Development Tools	290
KMV11-A HDLC Framing Software	1319
KMV11 RSX X.25 LAPB Link-Level Software	1320
KRONIX-11™	947
KRONIX-PC™	948
KSAM (Keyed Sequential Access Method)	290
KW11-C Subroutines	190
KXMLNK (Konelar Extended Memory Linker)	291
KXT11-CA Peripheral Processor Tool Kit/RSX	1320
KXT11-CA Peripheral Processor Tool Kit/RT-11	1321
LabCom+®	763
LABELS: The Mailing List System	1091
Labor Performance	1016
Laboratory Applications-11 Library	1217
Laboratory Data Management System	763
Laboratory Module: Leadership Series™	763
Laboratory Peripheral Device Handlers for the LSI-11	579
LABPlus (Laboratory Information System)	764
LAD/11 (Local Area Devices) for RSX	579
LALR (1) Parser Constructor to Translate Computer Languages	893
Lambert Geodetic Conversion	507
LASL Cornucopia #1	291
LA.SYS	1321
LAT-11	1322
Laundry Module: Leadership Series™	764
Law Firm Management System	948
Lawrence Plotting Package for BASIC-PLUS	698
Lawrence RUNOFF	1382
LazerCalc	240
LCP01 Software	1383

1630 Product Title List

Product Name	Page
LDAT (Logic Design Automation Terminal)	508
Leadership Series™ Hospital Information System	765
LEADS: An Interactive Data Base Management System for Education	448
LEADS (Local Education Agency Data System)	448
LEAP (Library Electronic Acquisition Program)	955
LEDGR	820
Legal Time and Accounting System	949
Legal Time and Billing System	949
Leverage	821
LEX-11	1092
LEXET	1092
LG.SYS: Centronics 739 Serial Printer Handler	1322
LIBERTY™ Agency Management System	849
LIB.FOR Library Routines	291
Line Printer Plot	699
LINK: FORTRAN-Callable Task Linking	292
Linwood (Linear Least-Squares Curve-Fitting Program)	508
LISP for RSX-11	894
LISP11 for RSTS	894
LISP11 for RT-11	895
LISTER: Listing Utility Program	1383
LISTRSX: RSX-11D Multicolumn Listing Utility	1384
LOAD PDT	1162
Loads	509
LOCATE — Multidevice File Locator	580
LOCK	190
Lock-11	1122
Log: A Log-In, Log-Out Utility for RT-11	190
Log and Lumber Inventory Systems	424
Logo for the Professional 300	449
LOGOUT: RSX-11 Remote Terminal Logout	1323
L/P (Labor Performance), MCBA, Inc.	964
LP (Linear Programming)	1016
LSI-11 Audio Cassette Utility	580
LSI-11 Microprogramming Tools, Version 1.0	292
LSI-X.25 Front End Processor	1323
LSP-11 (Laboratory Subroutine Package)	1217
LST: A Paging Utility for Non-Form-Feed Devices	1384
LSTERM: Virtual Terminal Program	1323
LT/AMS — Financial Management for Long-Term-Care Facilities	765
LT/CARE — Accounts Receivable for Long-Term-Care Facilities	766
LT/PRX — Payroll and Personnel Management for Long-Term-Care Facilities	766
LXY-11 Plotting Package	699
Lyrix™ Word Processing System	1093
M-CUBED — Multiple Microprocessor MACRO Cross-Assembler	293
M (MUMPS)	1123
M-Net™ (Manufacturing Network)	1017
M/11 +	1123
M11 PIPE	510
M6800/01/05/09 Cross-Software Packages	293
MACDBG-RT	294
Machinery Monitoring Software System	1017
MACRO-05 MC6805 Cross-Development Tools	895
MACRO-09 MC6809 Cross-Development Tools	895
MACRO-11 Input/Output Macro Subroutines Library	295
MACRO-65 6502 Cross-Development Tools	896
MACRO-68 MC68000/10 Cross-Development Tools	897
MACRO-80 8080/8085 Cross-Development Tools	897
MACRO-86 8086/8088 Cross-Development Tools	898
MACRO-8K Z-8000/1/2/3/4 Cross-Development Tools	898

Product Name	Page
MACRO Library Macros for MACRO-11 Program Development and Debug	295
MACRO-MC MC6800/01/02/03/08 Cross-Development Tools	899
MACRO Package for MACRO-11 to Assemble INTEL 8008 Code	900
MACRO Package for MACRO-11 to Assemble INTEL 8080 Code	900
MACRO Package for MACRO-11 to Assemble Motorola 680X Code	900
MACRO Package for MACRO-11 to Assemble Signetics 2650 Code	901
MACRO-Z8 Z-80 Cross-Development Tools	901
MACROCAT	1070
MacroVAX	902
MACS-11 (Media Access and Conversion System for PDP-11)	241
MACSP (MACRO-11/SP Structured Programming Macros)	902
MACSUB: RSX-11M MACRO Subroutines	903
MACSYS-RT (MACRO-11 Development System Software)	296
MADRV (Memory-Assisted Disk MA)	1324
MAESTRO	1018
MAGIC*CALC	638
MAGIC/L™	903
MAGINT (Magnetic Tape Interchange Program)	581
MAIL: Electronic Mail Package for RSTS/E	1093
Mail List/RSX	1094
Mail Package	1094
MAILER: Mailing List System	1095
MAILHOUSE™	1410
Mail/Message System	1095
MAINSY-IMPRS Preventive Maintenance System	552
Maintenance Management — System 600	553
MAMS (Municipal Accounting Management System)	660
MANAGE — Data Base Management System	94
Management Case Studies	965
Management Program 1000®	950
MANEX (Manpower Expenditure Recording)	965
Manufacturer Order Processing	1018
Manufacturing Control System	1019
Manufacturing Systems	1019
MAP-11 (Municipal Accounts Payable)	660
MAPPS (Management and Project Planning System)	966
M/APS (Menu/Authorization Processor System)	296
MAPS/DB	821
MAPS/GRAPH	699
MAPS/MODEL	639
MAPSS = MAGIC (Management and Analysis of Geographic Characteristics Information)	700
MAR-11 (Municipal Accounts Receivable)	661
MARGOT: A MACRO-Based Generator of Command Language Interpreters	904
Marketab®	1236
Marketing Strategy Simulation for Minicomputers	1236
Master Mind for MINC BASIC or RT-11 BASIC	171
MATCHMASTER™	581
MATCHUP: Assignment	1171
MathStat Library	297
Matrix Routines	297
Matrix Subroutines	298
MAXX A Management Accounting System	95
MAXX D Accounting and Management System for the Distribution Industry	388
MBOS/5 Operating System	1124
MBOT04 Bootstrap Loader	582
MBP (Metal Building Program)	510
MBS AP (Manus Business Systems Accounts Payable)	95
MBS AR (Manus Business Systems Accounts Receivable)	96
MBS ASR (Manus Business Systems Automatic Stock Replenishment)	389

1632 Product Title List

Product Name	Page
MBS GL (Manus Business Systems General Ledger)	97
MBS IM (Manus Business Systems Inventory Management)	389
MBS OP (Manus Business Systems Order Processing)	390
MBS PO (Manus Business Systems Purchase Order Management)	391
MBS SA (Manus Business Systems Sales Analysis)	1237
MBS WD (Manus Business Systems Automotive Parts Warehouse Distributor System)	391
MCS-3 (Manufacturing Control System)	1020
MCSIM (Monte Carlo Simulation)	511
MDBS III	298
MDS-4	392
MDS (Medical Data System)	767
MDX	767
Medical Billing and Accounts Receivable	768
Medical Laboratory System	768
Medical Office Manager	768
Medical Records System	769
Medication/Treatment Sheet System for Nursing Homes	770
MediCom®	770
MEDICOMS (Medical Office Receivables Management System)	770
MEDISYS	771
MEDREP — Systems for Preparation of Medicaid/Medicare Reports	772
Membership	967
MEMDISK	191
Memo	1096
Memory Disk	191
Memory Dump	299
MENU-11/RSTS	299
Menu Presentation Software	582
THE MENU SYSTEM	300
MENU/E	300
MESTAMED	772
MGL-11 (Municipal General Ledger and Financial Reporting)	662
MGSP (Multiware Graphics Subroutine Package)	701
Micro Concurrent Pascal (mCP) Cross-Compiler	904
MICRO FEED	155
MICRO LP	1020
Micro-Master Data Base Applications Generator	300
MICRO.BAS: 8080-Based Microcomputer Simulator	301
Microbench 6800 Cross-Assembly Package	301
Microbench 68000 Cross-Assembly Package	302
Microbench 6805 Cross-Assembly Package	303
Microbench 6809 Cross-Assembly Package	304
Microbench 8021/8035/8048/8748 Cross-Assembly Package	305
Microbench 8051 Cross-Assembly Package	306
Microbench 8080/8085 Cross-Assembly Package	307
Microbench 8086/8087/8088 Cross-Assembly Package	308
Microbench C Cross-Compiler for the Intel 8086/8087/8088	309
Microbench FORTRAN-77 Cross-Compiler for the Intel 8086/8088	310
Microbench Pascal Cross-Compiler for the Intel 8086/8088	311
Microbench Simulators for the Zilog Z80, Intel 8080, and Intel 8086	312
Microbench Z80 Cross-Assembly Package	313
Microbench Z8000 Cross-Assembly Package	314
MICRODARE	1217
Micro/GVS (Genesys Videotex System)	701
Microlink	822
microMAGIC Microprocessor Software Development Package	905
MicroPower/Pascal-Micro/RSX	315
MicroPower/Pascal-RSX	315
MicroPower/Pascal-RT	316

Product Name	Page
Micro/RSTS	1124
Micro/RSTS BASIC-PLUS-2	906
Micro/RSTS COBOL-81	906
Micro/RSTS DATATRIEVE-11	822
Micro/RSTS DECgraph-11	702
Micro/RSTS FORTRAN-77	907
Micro/RSTS FORTRAN-77 DEBUG	317
Micro/RSX	1125
Micro/RSX 2780/3780 Emulator	1324
Micro/RSX 3271 Protocol Emulator	1324
Micro/RSX BASIC-PLUS-2	907
Micro/RSX COBOL-81	908
Micro/RSX DATATRIEVE-11	823
Micro/RSX DECgraph-11	702
Micro/RSX DECType	1384
Micro/RSX DIBOL	909
Micro/RSX FMS-11 (Forms Management System)	824
Micro/RSX FORTRAN-77	909
Micro/RSX FORTRAN-77 DEBUG	318
Micro/RSX PDP-11 Pascal	910
Micro/RSX SORT/MERGE	583
MIIS Standard	1125
MIIS/MAGIC (MEDITECH Interpretive Information System)	1126
MIL-Concept Production Control System	1021
Milldata	825
Milltech: Melt Management System	1021
MIMER: The Software Machine	825
MINC-11 Data Acquisition Package for RSX-11M	241
MINC-11 Utility Package, Including HIPLLOT	703
MINC BASIC	910
MINC BASIC and RT FORTRAN Support for the HIPLLOT DMP4 Plotter	704
MINC BASIC/FORTRAN Support for HIPAD Digitizers	704
MINC BASIC/FORTRAN: Support for the Nicolet Explorer	1325
MINC RT-11/FORTRAN Support for the Nicolet Explorer Via DLV11-J Serial Line	1325
MINC/BASIC-FORTRAN IV Support for the Tektronix 4662 Plotter	704
MINC/BASIC, MINC/FORTRAN Support for HIPLLOT Plotter	705
MINC/BASIC, MINC/FORTRAN Support for the DP101 Plotter	705
MINC/FORTRAN Support for MNCKW, VT100, DLV11-J	1326
MINI LP	1022
MINI-PHARM (Minicomputer Hospital Pharmacy Package)	772
Minimail	1096
MINIMOVIE.BYU	511
Minimumtour: Minimum Path Routines	512
Minitab® Data Analysis Software	1218
MIOS-11/RXS Driver	1326
MIRA	319
Miracle Viewdata	826
MIS (Management Information System)	583
Mistress "Plus"	826
Mistress Relational Database Management System	827
Mistress/32	828
Mixed-Radix Fourier Transform Program	242
MJA™ Accounts Payable for the PRO 350	97
MJA™ Accounts Receivable for the PRO 350	98
MJA™ General Ledger for the PRO 350	99
MJA™ Order Entry/Inventory	99
MJA™ Payroll and Personnel	100
MJCLOCK (Multijob Clock Program)	191
MLP (Maximum Likelihood Program)	1219
MM: A Mastermind Game	171

1634 Product Title List

Product Name	Page
MMS (Materials Management System)	1022
MMS-R Radio-Dispatched Material Management System	1023
Mnemonic Dump	911
MOCS (Master Operator Control System)	192
MODLNK	1326
MODS (Manus Oil Dealer System)	392
Modula-2/RSX	911
MOFI	512
MOLDYN (A Molecular Dynamics Package)	242
Money Orders System	639
Monitor Commands for Namelists Package	192
MONITR: A Display Program for RSTS/E	1127
Mortgage Loan Closing Software	1198
MOS-11 (Memory-Only System)	1127
MOSFIT (MOS Transistor Model Parameter Extraction Package)	512
MOSTE (Management of System Telephone Expenses)	1185
Motorola 68000/10 Cross- and Resident Assembler	320
MP System	829
MPMS (Medical Practice Management System)	773
MPS Cross-Assembly Programs for RT-11	912
MPS (Menu Presentation Software)	1162
MPY-11 (Municipal Payroll)	662
MRMLIB	912
MRP (Material Requirements Planning), MCBA, Inc.	1024
MRRT-11 (Memory-Resident RT-11)	1128
MRS (Medical Records System)	774
MSPOOL	1385
MTK-II Multi-Tasking Kernel	320
MTLIB (Magnetic Tape Driver Library and Utilities)	243
MTSKIN: Write on a Tape in Card Format	584
MTSKOUT: Read a Tape in Card Format	584
MU BASIC-11/RT-11	913
Multi-Tester System	450
Multilab — Comprehensive Clinical Laboratory Information System	774
Multipharm	775
Multiplan® Electronic Worksheet	639
Multiuser Digital Accounting System	100
Multiuser DTR	1327
MUMPS-11 Library Tape	321
MUNIS (Municipal Information Systems)	663
MUNIS/PLUS	664
Mutual Insurance Processing System	849
MUX200/RSX-IAS Multiterminal Emulator	1327
MYCRO/11 Process Management System	1024
NAG FORTRAN Library Service	1219
Nal Data Reduction	1220
NANOBIT Disk Sort	584
NC Tape Verification for Manufacturing Operations	1025
NCL — Interactive Graphics Software	1025
NCNET	1026
NCS (National Creditor System)	101
NCTAPE (Numerical Control Tape Processing System)	1027
NDTRAN2	513
NETEX (Network Executive)	1328
Network	514
NEUPAN (Neutral Point Analysis)	514
Neutron Activation Analysis	1220
NEXUS Communications Software	1328
NFC Mailing Module	1096
NFC Payroll Module	102

Product Name	Page
NFC Professional Accounting	102
NFC Property Management	103
NHIS (Nursing Home Information System)	776
Nicolet 1090 Digital Oscilloscope Handler and Interface to PDP-11	244
NMI Customer Profile Package	1237
NONLIN (Nonlinear Least-Squares Curve-Fitting Program)	514
NORTON (Astronomical Ephemeris Program Package)	1221
NRL "English Text to VOTRAX Parameters" Algorithm	1385
NUFORM Level I	1028
NUFORM Level II	1028
NYPLAN	640
OBJCON (General-Purpose Object Module Conversion Utility)	244
Objective-C	913
Observer	1128
ODT-11T	914
ODTV09: RT-11 Debugging Tool	321
Office Supply/1000	1097
Officeman	1097
Official Checks System	641
Offset	515
OGA\$ (Oil and Gas Accounting System)	425
Oil Burner Service/Inventory	1252
OLANDR	516
OMNICONROL® and OMNIPREP®	1029
OMS (Oil Movement System)	425
On-Line Registration System	451
On-Line Share Registration	641
On-Line Symbolic Region Access Utility for RSX-11/IAS	1129
One-Drive Diskette and File Copy	585
OPS (On-Line Payroll System)	103
OPTAN (Optical Systems, Evaluation, and Analysis)	516
ORACLE® Relational Data Base Management System	829
ORC: Object-to-MACRO Conversion	245
Order Eleven	393
Order Entry	104
Order Entry and Inventory	104
Order Entry and Invoicing	394
Order Entry Processing	1238
Order Entry System	395
Order Entry/Inventory	105
Order Entry/Inventory Control	105
Order Entry/Invoicing	395
Order Processing	396
Order Processing	396
Order Processing for Mailing List Rental	1238
Order Processing System	397
ORDERS Wholesale Distributor System	397
Oscar	1029
OSCAR: Conversational Computer	171
OS/ED (Screen Editors)	1386
OS/FT (File System)	585
OS/NET (Local Area Networking)	1329
OS/RT (Real Time O.S. Kernel)	1130
OSS (Optimal Sampling Schedule Designs)	1221
Othello	172
Outlet	516
p-System™ Version IV.2.1	1130
P8P11: ASCII File Transfer from PDP-8 to PDP-11	586
Pack	830
PACKET: Bill of Materials for Manufacturing	1030

1636 Product Title List

Product Name	Page
PAIS (Patient Accounting and Information System)	776
PAL8XR (PDP-8/Intersil 6100 Cross-Assembler Under RT-11)	914
PALETTE™: Computer-Aided Drafting and Design	705
Papersoft	398
Paramedics Billing	776
Paris	517
PARS: Professional Time, Billing A/R	106
PARSE/R SX: A Flexible FORTRAN-77 Filespec Parser	586
PARSE/RT: A Flexible Filespec Parser for FORTRAN	586
PAS-11/D (Professional Accounting Series-11/Dental)	777
PAS-11/M (Professional Accounting Series-11/Medical)	777
Pascal-2™	914
Pascal-2™ Cross-Compiler to Target 68K with Concurrency Package	322
Pascal Compiler	915
Pascal Formatter	323
Pascal Native and Cross-Compilers	915
Pascal-xii	916
Pascal/R SX	917
PASS (Payroll and Staffing System)	778
Pathology Billing	778
Patient Management System	779
PAX	642
Pay (Canadian Payroll)	107
Payables	779
Payroll	107
Payroll	108
Payroll	108
Payroll	109
Payroll	109
Payroll	110
Payroll	111
Payroll	111
Payroll	112
Payroll	113
Payroll	451
Payroll	779
Payroll	1172
Payroll	1172
Payroll (Canadian)	113
Payroll System	114
Payroll System	1172
Payroll System	1185
Payroll/Checkwriting System	115
PAYSOLVE (Payroll)	115
PB: Device Handler for Data I/O System 19 Prom Programmer	1329
PBS (Produce Brokerage System)	156
PC-102	1330
PC-11 (Process Control Operating System)	1131
PC-DOS for DIGITAL	1131
PC-Forms	1386
PC4010	1330
PC4014 Terminal Emulator	706
PC/DBS (Process Control Data Base System)	1030
PCL-11M	1331
PCM (Project Cost Model)	968
PCO (Pest Control Operators Management System)	1252
PDL and PDL/81 (Program Design Language)	917
PDP-8 Cross-Assembler and Utilities for RSX-11D	246
PEAK-11/M	1222
Peak Demand Limiting—System 600	553

Product Name	Page
PENQUIN™	399
PEP (Program Editor and Processor) Programming System	918
PEPS (Production Estimating and Planning System)	1031
PER-FORM™ (Personalized Form Letters)	1098
Peregrine Four	323
Performance Manager	642
Permanent Placement Personnel System	1173
Person System	1070
Personnel Administrator	451
Personnel Record System	1174
Personnel Searcher	1174
Perspective/700 Accounts Payable	116
Perspective/700 Accounts Receivable	116
Perspective/700 Bill of Materials System	1031
Perspective/700 General Ledger	117
Perspective/700 Inventory Management	399
Perspective/700 Order Processing	400
Perspective/700 Sales Analysis	1239
PET (Performance Evaluation and Tuning)	193
PFS	156
PFS (Patient Funds System)	780
Pharmacy	780
Pharmacy Module: Leadership Series™	781
PHENIX PASS	117
Phoenix-Pro™	968
Physician Systems	781
Pic-Pak: Computer Picture Collection	172
PIC (Parts Inventory Control System)	401
PICALC: Lifetime Earnings Estimation	951
PICAM	1032
PICS (Parts Inventory Control System)	1253
Picture Book	707
Pie	707
Pigeonhole	1422
Pioneer COMMAND Accounts Payable Module	118
Pioneer COMMAND Accounts Receivable Module	118
Pioneer COMMAND Bill of Materials Processor Module	1033
Pioneer COMMAND Fixed-Assets Module	643
Pioneer COMMAND General Ledger Module	119
Pioneer COMMAND Inventory Management Module	401
Pioneer COMMAND Master Production Scheduling Module	1033
Pioneer COMMAND Material Requirements Planning Module	1034
Pioneer COMMAND Production Control Module	1035
Pioneer COMMAND Purchase Order Processing Module	402
Pioneer COMMAND Sales Order Processing Module	403
Pioneer COMMAND System for Financial Management, Distribution, and Manufacturing	831
PIP10	587
PIPCOS	517
Pipeline Layout #6000	518
PIPESYS — Double-Line Piping Drawing System	707
PL-11: High-Level Assembler Language	918
PLANFAX Actuarial System	643
PLANIT (Programming Language for Interactive Teaching)	453
PLANS: A Program to Plot Hard Copy on the Versatec Printer	246
PLC (Programmable Logic Controller) Device	1331
PLDATA	519
Plessey-CALC	1098
Plessey-WP (Plessey Word Processor)	1098
PLIBR: A Library Control Program	587

1638 Product Title List

Product Name	Page
PL.MAC: A Write-Only Device Handler for the IEEE-488 Interface 11-482	1332
PLOT	708
PLOT-11/RSTS and PLOT-11M for RSX	709
PLOT-11/RT	709
PLOT: Digital Incremental Plotter Software Package	710
PLOT3D: 3-D FORTRAN Plotting Package for MINC-11/VT105/HP-9872A	711
PLOT50 (Vector Plotting for the LA50)	711
PLOT55 for RSX-11	712
PLOT55 for the VT125 (VT105 Emulator) Under RT-11 FORTRAN	712
PLOTPR.BAS: GIGI/DECwriter IV	713
Plotting Package for RT-11 FORTRAN	713
PLOTXY.BAS: GIGI/Houston Instruments DMP29R X-Y Plotter Graphics Utilities	713
PLXY-11M	714
PLXY-11M-PLUS and PLXY-11/RSTS	714
PLXY-11/RT	715
Plycom Core Accounting Systems	120
PM11 Accounts Receivable	121
PM27 Accounts Payable	121
PM28 General Ledger/Financial Reporting	122
PM32 Order Processing/Inventory/Sales Analysis	403
PMCS (Process Monitoring and Control System)	1035
PMIS (Plant Management Information System)	553
PMM (Paged Memory Manager)	324
PMM/MBS Job Cost System	969
PMS (Preventive Maintenance Scheduling System)	1036
PMS (Property Management System)	1198
PMST (Preventive Maintenance Scheduling and Tracking System)	554
PNMS III (Peregrine's Network Management System III)	193
P/O (Purchase Order and Receiving), MCBA, Inc.	1037
Point of Sale	1411
POLFIT (A General Polynomial Fitting Program)	247
poly-COM™	1332
poly-XFR™ CP/M® Communications	1162
polyFORTH II	1132
POMS (Professional Office Management System)	951
POM/T (Purchase Order Management/Tendering System)	644
Poor Man's Program Design Language for RSX-11/IAS	919
PORTACALC (AnalytiCalc): A 3-D Spreadsheet/Data Base System in	
VMS/BACKUP	831
PORTACALC XL: Floppy Version	832
PORTACALC/AnalytiCalc: A 3-D Spreadsheet/Data System	832
PORTSIS™ Investment Management	644
P/OS Diskette, Hard Disk, and Hard Disk (Arabic)	1132
POS/MIMS: Point-of-Sale System for Lumber Yards/Home Building Center	
Industry	1412
PPBS: Budgeting/GL/AR/AP	645
P/R (Payroll), MCBA, Inc.	1175
Practice Management	970
Practice Management System	782
Practice Management System	782
PREMINI	970
PRINCE (Production Information Center)	1037
PRINT: Printer Initialization Routine for the LA120 Printer	194
The Printer's Companion	1163
PRM-11 (Pascal Record Management)	324
PRM-11 (Pascal Record Management-11)	919
PRN-1 Pharmacy Package	783
PRO-2780/3780 Communications Applications	1333
Pro-Accountant: Modular Integrated Accounting System	123
PRO-CP/M® -80	1133

Product Name	Page
PRO-FPS	645
PRO-IV Accounts Payable	123
PRO-IV Accounts Receivable	124
PRO-IV Applications Processor	920
PRO-IV Fixed Assets	124
PRO-IV Fourth Generation Language	920
PRO-IV General Ledger with Financial Report Writer	125
PRO-IV Inventory Control	125
PRO-IV Medical Management	783
PRO-IV Order Processing/Invoicing	126
PRO-IV Payroll/Personnel Management	1175
PRO-IV Purchase Order	126
PRO-IV Sales Analysis	1239
PRO-IV Tax Management	127
PRO (Process-Oriented Software)	1038
PRO-RDM (Responsive Data Manager)	325
PRO/Applications Starter Kit for Diskette or Hard Disk	1164
PRO/Associate	1334
PRO/BASIC	921
ProBiz™ Accounts Payable	127
ProBiz™ Accounts Receivable	128
ProBiz™ General Ledger	129
ProBiz™ Job Costing/Work in Process	1039
ProBiz™ Order Processing and Inventory Control	404
ProBiz™ Payroll	129
ProBiz™ Purchasing Management	130
Process Supervisory Control	426
PRO/COBOL-Plus™	921
PRO/Communications for Diskette or Hard Disk	1335
PRODAT (Project Day Computation)	223
PRO/DATATRIEVE	833
PRO/DECnet	1335
PRO/DIGICALC	646
PRODSTAR-MRP	1039
Produce Distribution System	156
Production Control Systems	405
Professional CTS-300	1133
Professional Host Communications	1336
Professional Host Tool Kit	922
Professional Host Tool Kit BASIC-PLUS-2	923
Professional Host Tool Kit COBOL-81	923
Professional Host Tool Kit DIBOL	923
Professional Host Tool Kit FORTRAN-77	924
Professional Host Tool Kit FORTRAN-77 DEBUG	925
Professional Host Tool Kit Pascal	925
Professional Installation and Maintenance	1134
Professional Real-Time Interface Library	247
PROFILE — Integrated Banking System	646
Programs for Analyzing Stress-Strain Data from Lung Parenchyma and Artery Tests	784
PRO/IVIS Loadable Driver and Subroutine Library	716
Project Cost Accounting System	519
Project Delta, Section B: Statistics	519
Project Delta, Section C: Business	971
Project Delta, Sections E and F: Additional Mathematics and Teacher Assistance	520
Project Delta, Sections G and H: Business and Data Processing	647
PRO/Laboratory Subroutine Package	248
Prolog	453
Prolog-1 (Programming in Logic)	325
PROM Programming Software	248

1640 Product Title List

Product Name	Page
PROM/RT-11	1337
PRO/NAPLPS	1337
PROOF: A Proofreading Program/Spelling Checker	1386
PRO/Office Workstation	1099
Property and Casualty Insurance System	849
Property Management (Rental)	1199
Property Management System	1199
PRO/Producer Tool Kit	326
PRO/RDT	833
PRO/RTSORT™	588
PROS (Prospect, Letter, and Sales Facility)	1240
PRO/Scientific Subroutine Package	327
PROSE-PLUS	1387
PRO/SIGHT	716
PRO/SNA Communications	1338
ProtoCall 1000™	834
PRO/Tool Kit	327
PRO/Tool Kit BASIC-PLUS-2	925
PRO/Tool Kit COBOL-81	926
PRO/Tool Kit DIBOL	926
PRO/Tool Kit FORTRAN-77	927
PRO/Tool Kit FORTRAN-77 DEBUG	328
PRO/Tool Kit Pascal	928
PRO/Tool Kit Real-Time Interface Library	328
PRO/TSX-PLUS™	1134
PRO/VENIX™ Base System Kit	1135
PRO/VENIX™ Software Development Kit	329
PRSN (Personnel)	454
PS (Personal Secretary)	1100
PSS/2P (Power System Simulator)	521
PSS/O-S (Power System Simulator for Operations)	522
PSYCHROM: A Calculating Psychrometric Properties Program	1222
PTB (Professional Time and Billing)	131
Purchase and Supply Control	406
Purchase Order Accounting	132
Purchase Order and Receiving	1040
Purchase Order Processing	1040
Purchase Order System	223
Q-CALL	1100
Q-DATE	1101
Q-FORM	1101
Q-MAIL	1101
Q-MATH	1102
Q-MENU	1102
Q-NET — Interface to DECnet	1339
Q-NOTE	1102
Q-OFFICE	1103
Q-ONE	1103
QBLIB (CAMAC Subroutine Library)	1222
QM (Quick-Mail)	1104
QMS PROGRAMS® Computer Software/Cost of Quality and Material Review	1041
QMS PROGRAMS® Computer Software/Customer Complaint and Field-Failure Analysis	1041
QMS PROGRAMS® Computer Software/Defect Analysis	1042
QMS PROGRAMS® Computer Software/Environment	1042
QMS PROGRAMS® Computer Software/Finished Goods Release	1043
QMS PROGRAMS® Computer Software/Instrument Calibration	1043
QMS PROGRAMS® Computer Software/Logistics	1044
QMS PROGRAMS® Computer Software/Materials	1044
QMS PROGRAMS® Computer Software/Optimum Inspection Strategies	1045

Product Name	Page
QMS PROGRAMS® Computer Software/Process Capability Studies	1045
QMS PROGRAMS® Computer Software/Product Shelf Life and Stability	1046
QMS PROGRAMS® Computer Software/Statistical Process Control	1046
QMS PROGRAMS® Computer Software/Supplier Ratings	1047
QMS PROGRAMS® Computer Software/What-If Studies	1047
QTEXT	1388
QUADPACK	1223
QUEST Graphical and Text Information System	717
QUEST, Standard MUMPS Teaching Program, and DOC	454
QUILL	835
QUOTE: Manufacturing Cost Estimating	1048
RABBIT-1 Resource Accounting, Auditing, and Billing System	194
RABBIT-2	195
RABBIT-3 System Monitor	196
RABBIT-4 Security System	196
RADIO-OSCAR	784
Radiology Accounts Receivable Management System	785
Radiology Billing	785
RAFT (Revenue Accounting for Truckers)	1422
RAM	718
RAM 12™	406
Random-Number Generator	132
RAS (Receiveable Accounting System)	133
RASM (Reverse Assemblies for RT-11)	928
RATFOR: Structured FORTRAN Preprocessor	929
RBS (Radiology Billing System)	786
RCC Billing/Inventory System	1186
RCMMAIL: Mail Merge	1104
RCPULT	522
RCS-7	1048
/rdb™ (Relational Data Base Management System)	588
RDDR: Virtual RAM Disk Driver	1339
RDM (Responsive Data Manager)	329
RDM™ (Responsive Data Manager)	835
RDSEDT (RSTS Disk Structure Editor)	589
REA Accounting Software	1187
REACT	1187
ReadCOBOL™	929
Real-Aid	1049
Real Estate Information System	1200
Real Information	1200
Real-Time Interface Support for the Nicolet Explorer by the RS2232	718
Real-Time Production Monitoring System	1049
REALISE Real Estate Office Automation System	1201
REAP™ (Reliability Effectiveness Analysis Program)	523
REAS (Real Estate Appraisal System)	664
RECAP	665
Receptor System 8835	523
RECOVR: An RT-11 Directory Restore Utility	590
RECOVR (RSX Corrupted Disk Recovery Utility)	590
Reese BASIC	930
REF-11™	955
ReGIS CAI Primer	718
Registration	455
Regression Analysis for Michaelis-Menten Kinetic Data	523
Reliant	836
Rental Service System	1253
RENUM: FORTRAN Renumbering Program	330
RENUM: FORTRAN Renumbering Program	330
RENUM.BAS (BASIC File-Renumbering Program)	331

1642 Product Title List

Product Name	Page
RENUM/PRENUM BASIC Renumberer	331
REPGEN (Report Generator)	1104
Report Writer	133
Reporter	134
RES	524
RESEQX	331
Residential Property Management	1202
Resort Property Management	1253
Resource Accounting Module	197
RESPAC (Real Estate Sales Data Retrieval Package)	1202
RESPOND	198
Retail Furniture System	1412
RETCON	836
Retrieval	837
REVISE: A Scanner for RT-11 Device Directions	590
REVR4	525
REWALL (Retaining Wall Design)	525
RGL/11	719
Rhintek Plot Package	719
RIM (Relationship Impact Model)	1254
RISKAN1/RISKAN2 (Risk Analysis — General/Risk Analysis — Accounting)	971
Riverdale Math Package	455
RJE (Remote Job Entry)	1340
RKLIN (Linear System Simulation: Runge-Kutta)	526
RLUTIL	591
RMS-11 FORTRAN—Callable Subroutines	591
RMS-7	134
RMSREO (RMS Indexed File Reorganization Utility)	591
RNI (WRDPRO—Word Processing/Text Editing)	1105
Roger Williams College Collection	719
ROLMAN III	456
RO.MAC MT ROLLIN File Device Driver	592
ROMIS™ (Rotating Machinery Information System) Large Host	555
ROSTER	1105
ROU: Receive Queue and File Scan Utility	592
RPG II	930
RPM	198
RPM (RSTS/E Performance Monitor and Optimization Tool)	199
RQRDMA: DMA Interlock for RSX	332
RS/1™	1224
RSTS-11 Library Tape 1	1136
RSTS-11 Library Tape 2	1136
RSTS Libraries for Swedish Pascal	931
RSTS MACRO Odds and Ends	931
RSTS Performance Measurement Package	199
RSTS Smart Mailer	1106
RSTS System Utilities from the University of Tennessee	1136
RSTS/E	1137
RSTS/E-2780	1340
RSTS/E DECgraph-11	720
RSTS/E DIBOL	932
RSTS/E File List and Scan Utilities	332
RSTS/E High-Performance 2780/3780 Emulator	1341
RSTS/E INDENT	1388
RSTS/E Whittier College Package, Part I	1137
RSTS/E Whittier College Package, Part II	200
RSX-11 2780/3780 Emulator	1341
RSX-11 BASIC	932
RSX-11 FOCAL	933
RSX-11 Magtape Cornucopia	1138

Product Name	Page
RSX-11 PSI/M (Packetnet System Interface)	1342
RSX-11 PSI/M-PLUS (Packetnet System Interface)	1342
RSX-11 TECO with Buffered Typeout, VT52 Window Support, and Doctor Game	1389
RSX-11 TSU05 Device Driver	1343
RSX-11/3271 Protocol Emulator	1343
RSX-11D Software Collection	1139
RSX-11D System Utility Package	1139
RSX-11M Datalogging System for Acurex Netpac	249
RSX-11M-PLUS	1140
RSX-11M-PLUS DECgraph-11	721
RSX-11M-PLUS DECType	1390
RSX-11M-PLUS DIBOL	933
RSX-11M-PLUS System Accounting Reports with DATATRIEVE	200
RSX-11M Real-Time Operating System	1140
RSX-11M VIGL	721
RSX-11M/FORTRAN Enhancement Package for MINC	1141
RSX-11M/FORTRAN Real-Time Package for MINC	1142
RSX-11M/IAS RJE/HASP	1344
RSX-11M/M-PLUS RJE/HASP	1344
RSX-11M/SNA Protocol Emulator	1345
RSX-11/PROVUE	722
RSX-11S Real-Time Operating System	1142
RSX-620 (IPC 620 CIM to RSX-11M/M-PLUS Communications Support Package)	1050
RSX DLX-11	1345
RSX MDE/T-11 (Microcomputer Development Environment)	333
RSXLIB	333
RSXPROM	249
RT-11 2780/3780 Protocol Emulator	1346
RT-11 File Conversion Program for Absolute Loader Paper Tapes with SA ≤ 1000	249
RT-11 MDE/T-11 (Microcomputer Development Environment)	334
RT-11 on the Professional	1143
RT-11 Single-User Operating System	1143
RT-11 System Utilities MAPP, FIND, and GRAB	250
RT-11 to UNIX* Transfer Utilities	592
RT-11 V2.0/MU BASIC Utilities Package	334
RT-11/FORTRAN Enhancement Package for MINC (FEP)	1144
RT-11/FORTRAN Real-Time Package for MINC (FRP)	1145
RT-11/FORTRAN Support for Data Acquisition and Display on a VT105	250
RT-11/FORTRAN Support for the VT105 Emulator on the VT125	723
RT-DBASE	593
RT-NEWUSER V2.0	594
RT11/03 FORTRAN Extensions	934
RTEM-11 (RT-11 Emulator for RT-11, Version 5.1)	334
RTEM-11 (RT-11 Version 5.2 Emulator for RSX)	335
RT/EMT (RT-11 Emulator)	1146
RTFILE	837
RTL/2 (Real-Time Language)	935
RTMASCOT	1146
RTPack	1147
RTRSX: An RT Program to Read RSX Disks	594
RTSORT™	594
RUCAPS (Really Universal Computer-Aided Production System)	526
RUNOFF, Bonner Lab	1390
RUNOFF for RSX-11 and RSTS/E	1391
RUNOFF: M02.4-14	1391
RUNOFF M02.4H for the Professional 300	1392
RUNREF	1392
R/W (Report Writer), MCBA, Inc.	1393
RxCom	787
RXS (Pharmacy System)	787

1644 Product Title List

Product Name	Page
S-TRAN™ BASIC to C Translator	335
S220 CANSCAN	526
S235/S535 GAMMA-M	527
S240/S540 SPECTRAN-F	527
S245/S545 Quality Assurance Software	528
S531A/S631A ABACOS II	1224
S541/S641 APOGEE	528
S543 NAA	529
S/A (Sales Analysis)	1241
SACCPAY (Accounts Payable Package)	135
SACCREC (Accounts Receivable Package)	135
The Safe C Runtime Analyzer™	935
Safe C Statement-Level Profiler™	336
Safe C™ Interpreter	936
Safe Deposit Boxes Billing	136
Safe Deposit System	648
SAL-11 (Structured Assembly Language)	937
SAL Low-Cost Cross-Assemblers	937
Salerno/SPM+ (Statistical Process Monitoring)	1050
Sales Analysis	407
Sales Analysis	1241
Sales Lead Analysis	1242
Sales Management and Mailing List	1242
Sales Order Processing	1051
Sales Prospect Data Base	1243
SALGLA (Salivary Gland Analysis)	788
Sampler	1071
SATT: Real-Time Operating System	1147
SATURN-BASE®	838
SATURN-CALC™ Electronic Spreadsheet	648
SATURN-GRAPH™	723
SATURN-WP™ Word Processing/List Processing	1394
Sauer Library	136
SAVER	595
SB-5 (System Builders-5)	337
SBC-11/21 Downloader	1347
SCAN (Single-Channel Analyzer)	337
SCCS (Source Code Control system)	338
SCHED: Manufacturing Scheduling System	1052
Scheduling	456
School Business Administrator	457
School Fiscal Accounting	458
School Instructional Packages	459
School Payroll Package	459
School Student Accounting Package	460
SCORE	460
SCORE (Supervisory Control of Refrigeration Equipment)	1052
SCPLT: CRT Screen Plot Program	724
Scribe Subscription and Merchandise Fulfillment System	1071
SCRIPTORIUM II: Word/List Processing	1107
SDM (Symbolic Drawing Machine)	724
SDP	338
SDP-PLUS (Structure Determination Package)	1225
SDP (Seismic Data Processing)	1225
SDRC® FATIGUE™	529
SDRC® MODAL-PLUS™	529
SDRC® SABBA™	530
SEARCH/PURGE — Mailing List Deduplication Program	1243
SEED DBMS (Data Base Management System)	838
Select	596

Product Name	Page
SELECT	1394
Selector	1072
SENTRY-11	200
Series DEC	224
Series IV System	938
SETCON: Process Control Software for Industrial Processes	1053
Seven BASIC Games	172
SFC (Shop Floor Control), MCBA, Inc.	1053
SGENLED (General Ledger Package)	136
Shaft: Stress Calculations	530
SHARE-eleven	1148
SHAREplus	1148
Shelf	1413
Shop Floor Control	1054
Shop Floor Control Systems	407
Shop Floor Data Collection	1054
Shop Schedule and Machine Loading	1055
SIBOL (Software Ireland Business-Oriented Language)	938
SIBYL/RUNNER® Interactive Forecasting System	972
SIGI (System of Interactive Guidance and Information)	461
Simple Line and Bar Graph Program	725
SIMPLEPLOT Mark 2	725
SIMPLEPLOT Mark 2 Section 2	726
SIMPLEPLOT Mark 2 Section 4	726
SIMQU (Simulated Line Printer Queue)	201
SIMS (Supplies Inventory Management System)	1107
SIN-DAS (Single-User Data Acquisition System)	251
Single-, Double-, Triple-Precision ASCII to Decimal/Decimal to ASCII	251
Single-Disk DOPTER	596
Single-Precision Floating-Point Program for LSI-11 Without EIS and FIS Options	252
SISINF	339
SIZEB	531
SIZEE	531
SIZEP	532
SIZET	533
SKIPAG: File Utility to Skip Blocks/Pages	597
SKYMNK Software Support	533
SKYPORT	597
SL-11 Amusement Devices Accounting System	173
SLDRV: A Memory-Resident Disk Driver for RSX-11	598
SLEEP: Programs of Analysis of Sleep-Wakefulness Data	788
SLIB.BAS: Library Maintenance Program	598
SMARTEYE Routing Controller	408
SNDRCV (Send/Receive File Utility)	339
SNP11M for RSX-11M and RSX-11M-PLUS	1149
SofForms	340
SofGram Electronic Communications	1108
Soft Drink Bottler's Package	408
SOFTBOL	939
SofTeach® for UCSD Pascal®	462
SOLUTIONS DECK Design	340
SOLUTIONS DECK Dictionary	599
SOLUTIONS DECK DMS	341
SOLUTIONS DECK Extract	342
SOLUTIONS DECK Master	343
SOLUTIONS DECK Report Writer	343
SOLUTIONS DECK Transaction	344
SORT: Fast Memory/Disk Sort/Merge for RT-11	599
SORT for RT-11 for the Professional 300	599
SORT: Generalized File Sort Utility	600

1646 Product Title List

Product Name	Page
SORT (Singleton's Sort)	600
SORT: Utility ASCII Sort	600
SORT/MERGE	601
SOS: A Program for Saving Deleted Files	601
SourceTools™	345
SP (Serial Port I/O Handler)	1347
Space Invasion	173
Space War for Cursor-Addressing CRTs	174
SPAL-11 (Structured Programming Using Assembly Language)	939
Span	534
SPC (Standard Product Costing), MCBA, Inc.	1056
SPEAKR: Vented-Box Speaker Enclosure Calculator	1348
Specialty Item and Furniture Store System	1413
SPECS: A Menu-Control System for RT-11	345
Spectrum	788
SpeedCOBOL™	939
SPELL-11	1395
SPELL for RSX-11M	1395
Spelling Checker with Dictionary Maintenance Utility	1396
Spider II Manufacturing Planning and Control System	1056
SPIPE (Circular Pipe Analysis)	534
SpiriTrak™	1413
SPM-11M-PLUS (Software Performance Monitor)	1149
SPM-11M (Software Performance Monitor)	1150
SPON (Spontaneous Activity of Neuronal Spikes)	1226
SPOOL: Foreground Line Printer Spooler	602
Sporty	1414
SPR (Standard Product Routing), MCBA, Inc.	1057
Sprint	201
Sprint	789
SPSORT (FSORT3 Emulator)	602
SPSORT (Sort-1-Plus Emulator)	602
SPSORT (SORTM/SORTG Emulator)	603
SPSS-11™	839
SPSS/PRO™	840
SPY: RSX Accounting System	201
Square Root Routine for Integers	534
Squeezpak: Disk Compress and Optimization	202
SRF (System Reporting Facility)	202
SRPRDR (Serial Protocol Driver)	1348
SR/SE II (Survey of Reading/Study Efficiency)	462
SSMS (Service Station Management System)	409
SSP-11 (Scientific Subroutine Package)	535
STACS (Serials Tracking and Control System)	956
STAG II Drawing System	727
Stage 2/RSX	940
Stage 2/RT-11	940
Standard Product Costing	1058
Standard Product Routing	1058
STAR-eleven	1150
Star-Trek (SPACWR)	174
STAR TREK (SPACWR)	174
Start/Stop Time Optimization — System 600	556
STAT-11: Statistical Package	535
Steinmetz High School Card Reader Monitor	1151
STI-ANIMATION	535
STI-MATVAM	536
STM (Storage Manager)	345
STONE: A Program for Resolving Mossbauer Spectra	536
Storm Center	1072

Product Name	Page
STRADIS	409
Stress	536
STRESS-11: A Structural Analysis Program	537
STRESS (Structural Engineering Solver)	537
STRINGS (Storage and Retrieval Information Graphics)	728
Structural Member Analysis Programs	538
Student Administrator	463
Student Terminal Management System	464
SUBS (Standard Subroutine Library), Version II	346
Sunquest Laboratory System	790
Super Sort	603
Supercomp-Twenty™	649
SUPERDBG	346
SUPERMAX	941
SURFAC	728
SURVEY: Data Reduction and Plotting for Surveyor's Field Data	539
Suspect-Identification System	952
Suspense Ledgers	137
SVD (Singular-Value Decomposition)	540
SWAP: Modify Swapping/Shuffling Parameters	1151
SYM (Symbol Manager)	347
SYMBOL: Symbol Table Search Program	348
SYMBUG (Symbolic Debugger for Use with MACRO Programs)	348
Synergy	1164
System Device Handler for RM02, RM03, RP04, RP05, RP06, and RT-11 V4	348
SYZER: RT-11 System Sizer	203
TAB — A Low-Overhead Data Management System	841
TABS	603
TABS (Total Application for Building Suppliers)	224
TACT (Total Agribusiness Computer System)	157
TAM (Terminal Access Module)	203
TA.MAC: Very Friendly Serial Device Handler	1348
TANGO	1349
TAPEIA	540
TAPER	253
TAPS (Transportation Accounting Packages)	1423
Task Image Zapper and Other Goodies	349
Tax-11	666
Tax Planner	650
TBS Accounts Payable System	137
TBS Accounts Receivable System	138
TBS General Ledger System	139
TBS Order Entry System with Inventory Control, Billing, and Sales Analysis	410
TBS Payroll Accounting	140
TBS PDS (Pascal Development System)	349
TBS Time Accounting for Professionals	1176
TC (Total Communicator)	1349
TCAT/C (Test Coverage Analysis Tool)	350
TCFL: Terminal Control Function Library	351
TCU-300 Clock Daemon for Digital Pathways UNIBUS Clock/Timer	204
TCU-50 (Timing Control Unit)	204
TCU-50DYR Handler for RSX-11M/M-PLUS and Micro/RXS	205
TCUGET/TCUPUT Digital Pathways TCU-50D I/O	205
TDDRV (TDC 2000 Driver)	1350
TEAMS® -TOX	1226
TEC Manufacturing System	1059
TECHSCORE	650
TECO-11 (Text Editor and Corrector) for RSTS/E	1396
TECO, COPY, SRD, MCR, and RNO for P/OS	351
TECO Full-Screen Editor	1397

1648 Product Title List

Product Name	Page
TECO V28 for RT-11	1397
TECO V36	1398
TECO V36 for RSX-11D, RSX-11M, RSX-11M+, and IAS	1398
TED (The NDSU Terminal Editor)	1399
Tektronix 8001/8002/8550 Communication Package	1350
Tektronix Emulator for RSX-11	729
TELEP.BAS (Address Manipulator)	841
Telephone Accounting and Billing System	1187
TelEquip	1188
Television Operations Systems	1073
TELEVNT/TELSET/TELDAX: Telemetry Acquisition and Reduction	541
TEM (Terminal Emulator for RSX-11)	1351
Temporary Nursing Personnel Agency System	790
Temporary Services Personnel System	1176
TEMPRO	1351
Tenny Electronic Bulletin Board Message Mailing Facility	1351
TERM.FOR: Smart Terminal Program for MINC	1352
TESS™ (The Extended Simulation System)	729
TESTWARE	351
TEXT System for Technical Manuscript Preparation	1399
TFONT (Text Font Design Program)	729
Third-Party Claim Payment and Billing System	791
TIMANA-IMPRS Time-Analysis System	1177
Time and Billing	973
Time Management	974
Time Management and Billing	140
Timeline Accounts Payable	141
Timeline Accounts Receivable	141
Timeline Fixed Assets	142
Timeline General Ledger and Financial Reporting	143
Timeman	1108
Timeshare Contract Management System	1255
TIMETRACK: Project Time Accounting	1177
TIP (Tankage Inventory and Yields Programs)	426
TIP (Terminal Interface Program)	1400
Title System	666
TMR® (The Medical Record)	791
TMS-4 (TANO Macro System, Version 4)	427
TMS (Trust Management System)	650
TMS/2000 Tool Management System	1059
TNIX Operating System — Tektronix 856x Series	1151
TOLAS	410
TOLAS Inquiry and Reporting System	143
Tool Inventory	1060
The Toolbox	352
TOPMAN (Total Planning and Management), Version 2.0	974
TPINS (Times Publishing Interactive Newsprint Inventory System)	1073
TRACE.MAC/TR.MAC	352
Tracer C Debugger	353
TRAMP for RSX-11 and RT-11	353
Transportation/Airline/Airport Management Information System	1423
Travel System 4/11	1256
TREAD: Subroutines to Read/Write IBM Standard Label RECFM = FB Magnetic Tapes	604
Treasurer's General Ledger and Warrant Reconciliation	144
TREK: A Space Game for RSTS/E	174
TRIMS (Tire Dealers and Retreaders Information Management System)	411
Triton™ Security System	556
TRON Accounts Payable	144
TRON Accounts Receivable	145

Product Name	Page
TRON General Ledger	146
Trouble Ticket Reporting System	1188
TSH/CRIS — Credit Insurance Administration	850
TSH/Ordinary Insurance Administration	850
TSI JobCost	225
TSI P-M (Project Management)	1203
TSRUAP (A TSX-PLUS™ System Resources Utilization Accounting Package)	205
TSTE (Time-Share Terminal Emulator)	1352
TSX-PLUS™	1152
TSXLIB: A Library Implementation of EMTs for TSX-PLUS Version 5.1	1153
TTEST	541
TTLIB: VT100 Library Routines	354
TTLIB: VT100 Library for the Professional 300	354
Turnkey Data	146
Tutor	464
TUTR: BASIC Tutoring Programs	464
TEXTWRT: An RT-11 Text Formatting Program	1400
TYCHO/HASP	1352
Typist	1400
TYPSET — Digitized Character Subroutines	1401
UAP-LINK	1353
UCC-APT (Automated Program Tools)	1060
UCC/CAM 100	1061
UCSD Pascal® Compiler	941
UCSMP: A General Dynamic Modeling and Simulation Program	541
UDAP (Urban Drainage Analysis Package)	542
UDS General Ledger Accounting	147
UDS IAS (Insurance Accounting System)	851
UDS PMAS (Property Management Accounting System)	1203
UDS Real Estate Sales Analysis	1204
UDS REAS (Real Estate Accounting System)	1204
UFDOPT (UFD Optimizer)	604
ULISYS	957
Ultima	542
UltraCalc®	1164
ULTRIX-11 Operating System	1154
UML (Universal Microprocessor Development Laboratory)	355
UN1004/RXS	1354
UNIFORTH	942
UNIFY Relational Data Base Management System	355
UniplexII Word Processor	1109
Uniq™ UNIX* System V	1154
UNITAP/UNIWRI	253
UNITY Operating Systems	1155
UNIVAC NTR	1354
UNIVAC UTS400	1355
UNIX* MASCOT	1355
UNIX* System Tutorials	465
UNIX* Utility Pack	356
UPFINF: Get Accounting Information for IAS	206
UPFMOD: Modify Accounting File for IAS	206
USBRJT	543
USE: CPU Usage Monitor Display Facility for RSX-11M	207
USER-11 Database Management System	357
User Command Linkage-Plus	357
User Command Linkage-Plus for the Professional 300 Series	358
User-Mail	1109
USERBASICS	358
USERMN: An Idle-Terminal Monitor for RSX-11	207
/usr/tools	1401

1650 Product Title List

Product Name	Page
USX51 8051 Operating System	1156
USX86 8086 Operating System	1156
USX96 8096 Operating System	1156
UTIANA-IMPRS Utility Analysis System	1189
Utility-11	1189
Utility Routines ASCIB, JLBITS, and CSISR	253
Utility Routines for a PDP-11/45 with a Floating-Point Processor	543
UTL	208
VAMP	1355
VAMP (Vibration Analysis and Measurement Processor)	544
Vandata Z80 C Cross-Compiler	942
VANGO	544
VantagePoint	1414
Variable-Metric Routine for Function Minimization	545
VBS (IBM to PDP-11 VBS-Format Magtape I/O Package)	604
VC	1110
VCC (The Video Outlet Control Center)	1415
VCS (Viking Control System)	208
VDE (Viking Data Entry)	841
VDM (Viking Data Manager)	842
VEH-11 (Vehicle Registration)	667
Vehicle Cost and PM	1256
Vehicle Ledger System	1190
VET-11	792
Vet System/2000	792
VF	1110
VFM (Viking Forms Manager)	359
VFY: RT-11 Disk-Verification Utility	605
VIDEOPRO	1356
ViewComp Electronic Spreadsheet	651
Viewmaster — Microfilm Indexing and Retrieval System	842
VIOS (Video Input/Output and Processing Software)	254
Virtual DECTape System for RT-11 Version 4.0	1157
Virtual Disk	1356
Vista Publishing and Distribution System	1073
VISUAL/menu	359
VLISP-11	943
VLOAD: A Program for RT-11 Extended Memory Monitor	209
VM	209
VMIS (Visiting Nurse Home Health Management Information System)	792
VMSPIP	605
VN	1357
VOILA!	1402
Vote-R (Voter Registration Package)	667
Voter-11	668
Voter Registration System	669
VRTARY (Virtual Array Access Routines for RT-11 and TSX-PLUS)	360
VSV-01 Device Driver for RSX-11M	793
VSV11-M/M-PLUS Driver	1357
VT, BD, BD011, and IOS	730
VT (Virtual Terminal)	1358
VT105 Graphics Package	731
VT125 Graphics Hard Copy on an EPSON MX-80 Serial Printer	731
VT152.TEC	1402
VT55 FORTRAN-Callable Functions	732
VTAG	175
VTERM III	1358
VTERM (Virtual Terminal Program)	1359
VTERM (Virtual Terminal Support): MINC BASIC/FORTRAN IV	1359
VTERM/4010	1360

Product Name	Page
VTPONG: RSX-11M Task to Play Pong, Using VT52 or VT55 Terminal	175
VTUMC (Virtual Terminal Routine for UNIVAC 1100 Systems)	1360
VUE	975
W	209
Wabash College Student Information System	465
Wall	732
Warehousing Systems	412
Warehousing/Order Entry/Inventory/Purchasing	412
WATBOL-11 Compiler	943
WATDIS (Water Distribution System Analysis)	545
WATER-MAN HNA (Hydraulic Network Analyzer)	157
WATFOR-77 Compiler	944
Wayne Medical System	793
WCC CAT (Computer-Assisted Translation and Multilanguage WP System)	1074
WDS/2 (Warehouse Distributor System)	413
Welding Distributor System — TIMS BASIC +, 2 + 2, and Super +	414
WHAT-IS® — The Answer to Transportation and Supply/Distribution Networks	1423
Whetstone Benchmarks	210
WHOLESALE-11	415
Wholesale Lumber Management	1244
Wholesale/Liquid Product Inventory	415
Wholesaler's Software System	416
Who's Got the File?	1111
Wine and Beverage Distribution System	417
WIP (Work In Progress)	147
Wittenberg University Utility Package	360
Wood Beam Check	546
WORD-11	1403
WORD-11® Encryption Option	1403
WORD: Document Spelling Checker/Corrector	1404
Word List Processing	1111
WordMARC Author™	1404
WordMARC Composer™	1405
Work Order Record System	1257
Work Order System	1191
WRDBX Subroutine for Check Writing	254
WTCOAT	546
WUTIL	210
WWRAP (Wire Wrapping for Semiautomatic Machines)	1062
X	1405
X-TOOLS	361
X25-LAPB/HDLC-BAC	1361
X.Dot™	1361
XENIX® Operating System	1157
XFORM	362
XFR/XSL — RSX to RSX Communications Utility	1362
XX-11	418
XLISP: An Experimental Object-Oriented Language	944
XNS/ITP (Xerox Network Systems Internet Transport Protocols)	1362
XREF	605
XWORD	1111
YH for DH11/DHV11	1363
YL for DLV11J	1364
YZ for DZ11/DZV11	1364
ZCHART — Business Graphics	1112
Zetar	843
ZIN	147
Zip-Check	418
Zip-Man™	419
Zip-Pick™ Warehouse Automation System	419

1652 Product Title List

Product Name	Page
Zip-Stock™	420
ZIPSORT-11	210
ZORT	606
ZPLAN PLUS	651

Vendor Product Title List

Software product suppliers — other than DIGITAL — and their software products are listed alphabetically.

	Page
A. S. THOMAS, INC.	
NUFORM Level I	1028
NUFORM Level II	1028
ABAX COMPUTER SYSTEMS	
Abax Depreciation System	7
Abax Mailing Label System	1077
Abax Rental Management System	1246
ABC MANAGEMENT SYSTEMS INC.	
ABC/Analyst	612
ABC/Equipment Data and Repair History System	1246
ABC/Financial Planning, Modeling, and Reporting System	613
ABC/Gas	422
ABC/Inventory System	979
ABC/MM (Maintenance Management System)	548
ABC/PM Preventive Maintenance System	548
ABS ASSOCIATES, INC.	
ABS Accounting Software	8
ACADEMIC MANAGEMENT SYSTEMS	
Academic Management Systems	430
ACC	
ACCES Network File Management Service	558
ACCES Network Virtual Terminal Service	1261
ACCES NPP (Network Protocol Package)	1261
IF-11/HDLC-X.25 Link-Level Software	1314
ACCO BABCOCK, INC.	
AGVS and ASRS Flexible Manufacturing Systems	981
ACE MICROSYSTEMS LTD.	
FILETAB-D	280
LEX-11	1092
LEXET	1092
A.C.S. (AUTOMOTIVE COMPUTER SERVICES)	
DFI/FMS (Dealer Finance and Insurance/Forms Management System)	1419
ACTUARIAL MANAGEMENT SERVICES, INC.	
PLANFAX Actuarial System	643

1654 Vendor Product Title List

	Page
ADAC CORP.	
ADLIB	981
ADL DATA SYSTEMS, INC.	
APS (Accounts Payable System)	735
ATT (Automated Time and Attendance)	1169
Dietary Scheduling System	751
GLS (General Ledger System)	754
HDS/II (Healthcare Data Systems)	756
MENU/E	300
MRS (Medical Records System)	774
PAIS (Patient Accounting and Information System)	776
PASS (Payroll and Staffing System)	778
PFS (Patient Funds System)	780
RXS (Pharmacy System)	787
ADMINISTRATIVE PRODUCTIVITY, INC.	
Shop Schedule and Machine Loading	1055
ADSOFT LTD.	
Form Driver	283
ADVANCED COMPUTER COMMUNICATIONS	
IF-11/3780	1314
IF-11/X.25 Packet-Switched Network Firmware	1315
IF-11/X.25 PLUS PAD Software and Firmware	1315
ADVANCED COMPUTER SYSTEMS, INC.	
CDDRV (Cached Pseudo Disk CD)	1274
Grant Clock Tasks	188
MADRV (Memory-Assisted Disk MA)	1324
Mail List/RXS	1094
Memory Dump	299
MOS-11 (Memory-Only System)	1127
ADVANCED CONTROL SYSTEMS	
AGGDISS	214
COMADS (Computer-Aided Dispatching)	215
ADVANCED DATA MANAGEMENT	
DRS	809
ADVANCED DATA SUPPORT SYSTEMS, INC.	
CopyCalc	54
ADVANCED DIGITAL DATA, INC.	
Accounts Payable	11
Fixed Assets	70
Fuel Oil Accounting/Delivery Scheduling	384
General Ledger	79
Oil Burner Service/Inventory	1252
Payroll	107
SSMS (Service Station Management System)	409
Warehousing/Order Entry/Inventory/Purchasing	412
Wholesale/Liquid Product Inventory	415
ADVANCED INTERACTIVE SYSTEMS, INC.	
AVID	433
ADVANCED MANAGEMENT TECHNOLOGIES	
Key Conversational Planning System	964
PIC (Parts Inventory Control System)	401
TIP (Tankage Inventory and Yields Programs)	426

ADVANCED MEDICAL SYSTEMS

ConTrol — Materials Management Information System	748
Multilab — Comprehensive Clinical Laboratory Information System	774
Multipharm	775

ADVANCED SOFTEL CONCEPTS INC.

TelEquip	1188
----------------	------

AFI/DATATROL

Automated Collection Management	1408
Credit Authorization	1408

AGRICULTURAL COMPUTING AND CONSULTING

ADAM (Automated Dairy and Management)	150
---	-----

AID GMBH

X-TOOLS	361
---------------	-----

AIM TECHNOLOGY, INC.

AIM Benchmark — Suite I	179
-------------------------------	-----

AISCORP.

AISCorp. Medical Management Systems	734
---	-----

ALCOR FINANCIAL SERVICES, INC.

CMS-11 (Circulation Management System)	1066
--	------

ALCYON CORP.

C68	869
-----------	-----

ALDEN COMPUTER SYSTEMS CORP.

APPS/2 (Automatic Part Programming System, Version 2)	984
C-DASS (Computer Distribution and Storage System)	990

ALLEN ASSOCIATES, INC.

CMIS (Mental Health Management Information System)	745
DMIS (Doctors' Medical Information System)	751
VMIS (Visiting Nurse Home Health Management Information System)	792

ALLEN-BRADLEY CO.

Allen-Bradley Translator Software	983
---	-----

ALLIED DATA

Accounts Receivable Status	1180
Customer Service Inquiry System	1182
General Ledger System	1184
Payroll System	1185
Trouble Ticket Reporting System	1188
Vehicle Ledger System	1190
Work Order System	1191

ALPHAWARE

RDSEDT (RSTS Disk Structure Editor)	589
---	-----

AMERICAN GENERAL COMPUTERS, INC.

Insurance Business System™	848
----------------------------------	-----

AMERICAN SOFTECH INC.

MAXX A Management Accounting System	95
MAXX D Accounting and Management System for the Distribution Industry	388

AMHERST SYSTEMS INC.

SpiriTrak™	1413
------------------	------

1656 Vendor Product Title List

	Page
ANALYTIC DATA CO.	
ROSTER	1105
ANDREW SIPOS ASSOCIATES	
ASA PMS (Project Management System)	960
ANDYNE COMPUTING LTD.	
Menu Presentation Software	582
RT-11 to UNIX* Transfer Utilities	592
RTMASCOT	1146
UNIX* MASCOT	1355
UNIX* Utility Pack	356
ANN ARBOR COMPUTER, DIVISION OF JERVIS B. WEBB CO.	
AIM (Automatic Inventory Management)	368
ANTRIM CORP.	
General Ledger	80
Laboratory Data Management System	763
Medical Billing and Accounts Receivable	768
Payables	779
Payroll	779
Time Management and Billing	140
APEX MEDICAL SYSTEMS, INC.	
Apex Home Health Management System	735
APPLICATION DEVELOPMENT AND ENHANCEMENTS, INC.	
FMRP (Full Material Requirements Planning)	1004
APPLICATIONS SYSTEMS CORP.	
PRO-IV Accounts Payable	123
PRO-IV Accounts Receivable	124
PRO-IV Fixed Assets	124
PRO-IV General Ledger with Financial Report Writer	125
PRO-IV Inventory Control	125
PRO-IV Medical Management	783
PRO-IV Order Processing/Invoicing	126
PRO-IV Payroll/Personnel Management	1175
PRO-IV Purchase Order	126
PRO-IV Sales Analysis	1239
PRO-IV Tax Management	127
APPLIED BUSINESS SERVICES, INC.	
MANAGE — Data Base Management System	94
APPLIED DIGITAL COMMUNICATIONS, INC.	
NC Tape Verification for Manufacturing Operations	1025
APPLIED INFORMATION SYSTEMS, INC.	
AIS-PL/I Compiler	855
BURCOM (DIGITAL/Burroughs Communication System)	1271
EasyEntry Forms Management and Data Entry System	277
APPLIED MANAGEMENT METHODS, INC.	
TOPMAN (Total Planning and Management), Version 2.0	974
APPLIED OPERATIONS RESEARCH, INC.	
WHAT-IS* — The Answer to Transportation and Supply/Distribution Networks ...	1423
APUNIX COMPUTER SERVICES	
Array Processor Support Under UNIX*	1114

	Page
ARMADALE SYSTEMS INC.	
Accounts Payable	12
Accounts Receivable	21
General Ledger	80
Order Entry and Inventory	104
Payroll	108
Report Writer	133
Transportation/Airline/Airport Management Information System	1423
A/S DATALOG	
IBM 2780/3780	1310
IBM 3270	1310
IBM HASP	1310
IBM-SDLC/HDLC-UNC	1311
UNIVAC NTR	1354
UNIVAC UTS400	1355
X2-LAPB/HDLC-BAC	1361
ASA INC.	
Dispatch	1248
ASA INTERNATIONAL LTD.	
Export Package	382
International Trade Software	1410
ASCO FLIGHT WATCH, INC.	
Flight Watch	1421
ATHENA DIVISION OF SHIP ANALYTICS, INC.	
ATHENA/graph™ Presentation Business Graphics	673
ATHENA/slide	674
ATOMIC ENERGY OF CANADA LTD.	
FORSIM	495
AUTOMATED INFORMATION INC.	
ICAMS (Inventory Control and Management System)	385
TAPS (Transportation Accounting Packages)	1423
AUTOMATED OFFICE SYSTEMS, INC.	
AESOP (Aggregate Exception System for Mortgage Portfolios)	1194
DocuSearch Full-Text Retrieval System	1374
Legal Time and Billing System	949
AUTOMATED SYSTEMS, INC.	
ABC (Automated Bank Control System)	612
AUTOMATIC BUSINESS CONTROL SYSTEMS	
Automatic Business Control System	370
AUTOMATIC FORECASTING SYSTEMS, INC.	
Pack	830
AUTOMATION RESOURCES CORP.	
Accounts Payable	12
Accounts Receivable	22
Client Accounting	52
CPA Time and Billing	55
IIAAS (Independent Insurance Agency Accounting System)	847
Order Entry/Inventory	105
Payroll	108
Word List Processing	1111

1658 Vendor Product Title List

	Page
BAR CODE APPLICATIONS INC.	
Fixed-Asset Control	551
Who's Got the File?	1111
BATTELLE SOFTWARE PRODUCTS CENTER	
STACS (Serials Tracking and Control System)	956
BBC BROWN BOVERI & CO., LTD.	
Modula-2/RSX	911
BBN SOFTWARE PRODUCTS CORP.	
RS/1™	1224
BEDFORD RESEARCH	
I*S*P* (Interactive Signal Processor)	502
BELL & HOWELL	
Data Search	1371
BENSON, INC.	
GPR (Graphics Plotting Routines)	693
BENTLY NEVADA CORP.	
ROMIS™ (Rotating Machinery Information System) Large Host	555
BERNARD LITTMAN & ASSOCIATES	
Order Processing for Mailing List Rental	1238
BERNE ELECTRONICS, INC.	
CSM/O/P (Continuous System Modeling and Optimizing Program)	486
ELAN-AC	491
ELAN-MOD (Transistor and Diode Modeling Program)	492
ELAN-TR (Transient Radiation)	492
I/CAP (Interactive Electronic Circuit Analysis Program)	503
I/LOGIC (Interactive Logic Simulation)	504
OPTAN (Optical Systems, Evaluation, and Analysis)	516
UCSMP: A General Dynamic Modeling and Simulation Program	541
BETA PRINCIPLES	
AAAMIS (Advertising Agency's Accounting and Management Information System)	1230
CAMIS (Consultants' Accounting and Management Information System)	961
BETADATA SYSTEMS, INC.	
Court Club Management System	1248
BILES & ASSOCIATES	
AIM (Automated Industrial Monitoring)	981
AIM Batch (Automated Industrial Monitoring)	982
BIRD ISLAND COMPUTER SERVICES, INC.	
Mutual Insurance Processing System	849
BORER ELECTRONICS AG	
DID-X.25	1291
SRPRDR (Serial Protocol Driver)	1348
BOS NATIONAL, INC.	
BOS/5 Operating System	1115
BOS/AutoClerk	261
BOS/AutoIndex	1079
BOS/MicroCobol	864
BOS/Planner	1079
BOS/Writer	1079
MBOS/5 Operating System	1124

BOSTON SYSTEMS OFFICE, INC.

BSO/Assembler Microprocessor Relocating Assemblers	262
BSO/C Compiler	262
BSO/Com-1	1270
BSO/Debug Microprocessor Symbolic Debuggers	263
BSO/Fmtcnv (Format Conversion Program)	230
BSO/Mlib Microprocessor Program Librarian	263
BSO/Mlink Microprocessor Program Linker	264
BSO/Objcnv Format Conversion Program	230
BSO/Pascal Compiler	264
BSO/PLM Compiler	265
BSO/Tekld Tektronix Emulator Loading Program	1270

BRADFORD UNIVERSITY SOFTWARE SERVICES LTD.

SIMPLEPLOT Mark 2	725
SIMPLEPLOT Mark 2 Section 2	726
SIMPLEPLOT Mark 2 Section 4	726

BREUER & CO.

Accounts Payable	13
Accounts Receivable	22
Business Information System	619
FINPRO (Financial Projection Model)	631
General Ledger	81
Inventory Control	1014
Job Cost Accounting	818
KEYWORD Information Manager	819
Order Entry Processing	1238
Payroll	109
Purchase Order Processing	1040

BRIGHAM YOUNG UNIVERSITY, CIVIL ENGINEERING DEPARTMENT

MINIMOVIE.BYU	511
---------------------	-----

BRONX COMMUNITY COLLEGE

On-Line Registration System	451
-----------------------------------	-----

BUSINESS CONTROLS CORP.

Impact	1235
SB-5 (System Builders-5)	337

BUSINESS ENHANCEMENT SYSTEMS TECHNOLOGY

BACOMP (Pseudocompiler for RT-11/BASIC)	859
---	-----

BUSINESS SYSTEMS, INC.

CMS (Cable Television Management System)	1066
--	------

C-PAK CORP.

C-Chart System — Medical Accounting, Inventory	738
Integrated Inventory Management System	636
Vote-R (Voter Registration Package)	667

CABLESHARE INC.

LSI-X.25 Front End Processor	1323
------------------------------------	------

CADCENTRE LTD.

GINO	691
------------	-----

CADMATICS®

LDAT (Logic Design Automation Terminal)	508
SDM (Symbolic Drawing Machine)	724

1660 Vendor Product Title List

Page

CALIFORNIA COMPUTER PRODUCTS

CalComp Host Computer Basic Software (On Line/Off Line) 675

CAMBRIDGE COMPUTER ASSOCIATES

ZIPSORT-11 210

CAMIC LTD.

Cobra 214

INTEREST (Interactive Estimating) 220

CANALTA

NEXUS Communications Software 1328

CANBERRA INDUSTRIES, INC.

S220 CANSCAN 526

S235/S535 GAMMA-M 527

S240/S540 SPECTRAN-F 527

S245/S545 Quality Assurance Software 528

S531A/S631A ABACOS II 1224

S541/S641 APOGEE 528

S543 NAA 529

CARE INFORMATION SYSTEMS, INC.

CARE/DM 741

CARSON-NEWMAN COLLEGE

SURVEY: Data Reduction and Plotting for Surveyor's Field Data 539

CAST METALS SYSTEMS, INC.

Casting Costing, Pricing, and Profit Analysis 962

CATALYTIX CORP.

The Safe C Runtime Analyzer™ 935

Safe C Statement-Level Profiler™ 336

Safe C™ Interpreter 936

CBM ASSOCIATES, INC.

C-11 Accounts Payable 40

C-11 Accounts Receivable 41

C-11 Fixed Assets 1195

C-11 General Ledger 41

C-11 Hospital Resource Management 738

C-11 Human Resource Management 1169

C-11 Integrated Accounting Package 42

C-11 Inventory 43

C-11 Inventory I 43

C-11 Job Cost 44

C-11 Materials Management 989

C-11 Mortgage Banking I 620

C-11 Mortgage Banking II 946

C-11 Payroll 44

C-11 Property Manager Tracking System 1195

C-11 Purchase Order Processing 45

C-11 Report Writer 620

C-11 Sales Order Processing 1230

CENSUS COMPUTER SERVICES LTD.

AUTOVAX 858

CENTAURUS SOFTWARE, INC.

Athena Distributed Control System 549

CMMS (Comprehensive Maintenance Management System) 550

CERRITOS COMPUTER SERVICES, INC.

CCSI-PLOT® 676

CHESHIRE ENGINEERING CORP.

ARK — Magtape Archival and Backup Utility 560

Cross-Assemblers 270

CIPHERLINK CORP.

Any Databridge 1266

Any Master Network 1267

CISCO (COMPUTER INFORMATION SYSTEMS CO., INC.)

CHRIS (CISCO Hotel and Resort Information Systems) 1247

CLARITY CONCEPT SYSTEMS CO.™

Enforcer I™ 278

CLINICAL COMPUTING LTD.Clinical Data System Application Package and West Midlands RHA Blood Bank
System 744**CLINICAL DATA DESIGN**

MDX 767

CLOVER SYSTEMS AND SOFTWARE

Clover Personal Income Tax Package 53

CLYDE DIGITAL SYSTEMS, INC.

CALOUT 1272

CALOUT/CONTRL 1272

CONTRL 184

DIALBACK 1289

DOC 1373

Framer 1379

LOCK 190

PROS (Prospect, Letter, and Sales Facility) 1240

COEFFICIENT SYSTEMS CORP.

VTERM III 1358

VTERM/4010 1360

COMMUNICATIONS ANALYSIS CORP.

MOSTE (Management of System Telephone Expenses) 1185

COMMUNICATIONS RESEARCH GROUP

BLAST® (Blocked Asynchronous Transmission) 1269

COMMUNICATIONS SOFTWARE, INC.

Accounts Payable System 20

Depreciation System 627

F*I*R*E Report Writer 812

General Ledger 634

Payroll/Checkwriting System 115

RCC Billing/Inventory System 1186

COMMUNICATIONS SOLUTIONS, INC.

Access/BSC 3270 1262

Access/DIA 1263

Access/SNA 3270 1264

Access/SNA 3770 1264

Access/SNA 5250 1265

Access/SNA APPC 1265

COMPU-MECH, INC.

UMDL (Universal Microprocessor Development Laboratory)	355
--	-----

COMPU-SHARE, INC.

Accounts Payable and Cash Disbursements Package	19
Accounts Receivable and Statement Generation	27
Client Write-Up	52
Fixed Assets	71
General Ledger and Financial Reporting	85
Inventory Control	387
Job Cost	221
Order Entry and Invoicing	394
Payroll	109

COMPU-TOME, INC.

CT*OS Spelling Corrector	1370
--------------------------------	------

COMPUSOLV

Hospitality Management System	1249
-------------------------------------	------

COMPUTAPIPE

ANKOR	468
BFTHK	469
BONDJT	470
BOUSQ (Boussinesq)	470
BOXCUL (Box Culvert)	470
C300	471
C301A	472
C301B	472
C302	473
C303	474
Chanel	477
Cones	483
COORD	483
CRPLT	485
DLOAD	490
Elbow	493
FLGTHK	494
Gasket	497
Hammer	499
HBOLTS	499
HSULF (Hydrogen Sulfide)	501
Loads	509
M11 PIPE	510
MOFI	512
Network	514
NEUPAN (Neutral Point Analysis)	514
Offset	515
OLANDR	516
Outlet	516
Paris	517
PIPCOS	517
Pipeline Layout #6000	518
PLDATA	519
RCPULT	522
REVR4	525
SIZEB	531
SIZEE	531
SIZEP	532
SIZET	533
Span	534

	Page
Stress	536
Ultima	542
USBRJT	543
WTCOAT	546
COMPUTE-R-SYSTEMS, INC.	
Accounts Payable	13
Conflict of Interest	946
Docket/Calendar System	946
General Ledger	947
Management Program 1000®	950
COMPUTER ADVICE, INC.	
XK-11	418
COMPUTER ASSOCIATES, INC.	
CAPS	740
COMPUTER CENTER PUBLICATIONS	
COSAP™ (Conversationally Oriented Statistical Analysis Package)	484
Lawrence Plotting Package for BASIC-PLUS	698
Lawrence RUNOFF	1382
COMPUTER CONCEPTS CORP.	
6600 Plant Management System	978
COMPUTER COVENANT CORP.	
Integrated Manufacturing and Financial System, Version 4.0	1012
Tool Inventory	1060
COMPUTER GENERATION, INC.	
TACT (Total Agribusiness Computer System)	157
COMPUTER GRAPHICS	
ICLAYOUT	503
COMPUTER GRAPHICS LAB, INC.	
IMAGES II +	698
COMPUTER INGENUITY CONSULTING ASSOCIATES, INC.	
Chess Ingenuity®	164
COMPUTER INTEGRATED MANUFACTURING CO.	
CIMCO Interactive APT (Automated Program Tools)	991
G-Post (Generalized Postprocessor)	1005
PEPS (Production Estimating and Planning System)	1031
UCC-APT (Automated Program Tools)	1060
UCC/CAM 100	1061
COMPUTER MANAGEMENT CENTER, INC.	
Broadcast Management	1065
COMPUTER MASTERS INTERNATIONAL CORP.	
Apparel Master™	369
COMPUTER MODELING INTERNATIONAL LTD.	
Data*Model Spreadsheet Management System	625
COMPUTER PROGRAMMING SERVICES	
DISKTEST	567
RT-DBASE	593
RT-NEWUSER V2.0	594

COMPUTER PROGRAMS

Computer Byte or Word Checker	231
-------------------------------------	-----

COMPUTER SOFTWARE ASSOCIATES

Accounts Payable	14
Accounts Receivable	22
Bill of Materials	988
Customer Order Processing	371
Fixed Assets and Depreciation	72
General Ledger	81
Inventory Management	1014
Job Costing	1015
Labor Performance	1016
Payroll	110
Purchase Order and Receiving	1040
Sales Management and Mailing List	1242
Shop Floor Control	1054
Standard Product Costing	1058
Standard Product Routing	1058

COMPUTER SOFTWARE CONSULTANTS, INC.

TABS (Total Application for Building Suppliers)	224
---	-----

COMPUTER SYSTEMS CORP.

CALC-11/CALC-11 PLUS	621
ISAS (Interactive Student Accounting System)	447

COMPUTER SYSTEMS DEVELOPMENT (CSD) INC. OF MASS.

IMPCON-FMS	90
IMPCON (Inventory Management and Production Control System)	1012

COMPUTERIZED FORMS MANAGEMENT, INC.

CFMS (Computerized Forms Management System)	1081
---	------

COMPUTERIZED OFFICE SERVICES INC.

TANGO	1349
VISUAL/menu	359

COMPUTERS NORTHWEST, INC.

TRIMS (Tire Dealers and Retreaders Information Management System)	411
---	-----

COMPUTERS UNLIMITED

Welding Distributor System — TIMS BASIC +, 2 + 2, and Super +	414
---	-----

THE COMPUTERWORKS, INC.

Papersoft	398
-----------------	-----

COMPUTROL

Virtual Disk	1356
--------------------	------

COMPUTRON BUSINESS SOLUTIONS, INC.

Accountant II Accounts Payable System	9
Accountant II Accounts Receivable System	9
Accountant II General Ledger System	10
Accountant II Inventory Control System	367
Accountant II Order Entry System	367
Accountant II Purchasing System	368

COMTECH COOP., LTD.

Multiuser DTR	1327
---------------------	------

CONCAP COMPUTING SYSTEMS

Civil Library	478
---------------------	-----

CONCEPT ANALYSIS CORP.

CAPS — Section Properties Program	475
CBUMP — Automotive Bumper Dynamic Impact	475
CDIG — Graphics Digitizing Program	476
CLENS — Automotive Head Lamp Design Code	479
CMODEL — Finite Element Model Builder	480
CLOT — Graphics Plotter Program	484
CPOST — Postplotter for Finite Element Output	485
CSEAT — Seat Frame Analysis Code	486

CONCEPT COMPUTER SYSTEMS LTD.

Concept Capacity Planning	993
Concept Data Base Control — Operations	994
Concept Data Base Control — Materials	995
Concept Inventory Management	995
Concept Material Requirements Planning	996
Concept Product Costing — Materials	996
Concept Product Costing — Operations	997
Concept Purchase Order Control	997
Concept Works Order Control — Materials	997
Concept Works Order Control — Operations	998
MIL—Concept Production Control System	1021
Sales Order Processing	1051

CONCORD MANAGEMENT SYSTEMS, INC.

Series DEC	224
------------------	-----

CONSIDINE DIGITAL SYSTEMS

DOVETAIL JOM (Job-Oriented Manufacturer)	1001
Dovetail Journal Publisher	1067
DOVETAIL MRP (Materials Requirement Planner)	1001
DOVETAIL Wholesale Distributor	376
INFOTEX	1381

CONTEL INFORMATION SYSTEMS

RTFILE	837
--------------	-----

CORPORATE BUSINESS SYSTEMS LTD.

Minimail	1096
Officeman	1097
Timeman	1108

CORPORATE CONSULTING CO.

Contractor Cost Accounting System	216
Fuel Company System	384
Manufacturer Order Processing	1018
Medical Laboratory System	768
Project Cost Accounting System	519
Rental Service System	1253
Sales Lead Analysis	1242
Specialty Item and Furniture Store System	1413
Temporary Nursing Personnel Agency System	790

CORTRON CORP.

Home Health Management	757
Practice Management System	782

CREATIVE INFORMATION SYSTEMS, INC.

ICONS (Integrated Construction System)	220
--	-----

CREATIVE SOFTWARE INC.

Accounts Receivable	23
---------------------------	----

1666 Vendor Product Title List

	Page
CSI Accounts Payable	56
CSI Business System	56
CSI General Ledger	56
CSI Payroll	57
EXPAND	880
CSSI	
GSE-11	286
C.T.A. COMPUTER TECHNOLOGY & AUTOMATION	
DIGICOMM-11	1291
Retrieval	837
CULLODEN, INC.	
GALEN — Complete Medical Office System	754
CUSTOM COMPUTER SERVICES, INC.	
Banking — General Applications	617
Insurance Agency (Casualty)	847
CUSTOM COMPUTER SOFTWARE, INC.	
PICS (Parts Inventory Control System)	1253
PMST (Preventive Maintenance Scheduling and Tracking System)	554
CYBERGRAPHIC SYSTEMS INC.	
Cybergraphic Integrated Software	1067
CYMRIC COMPUTER SYSTEMS, INC.	
Pascal-xii	916
SUPERDBG	346
SUPERMAX	941
D & M SYSTEMS, INC.	
CAS (Comprehensive Accounting System)	45
CAS.1 (General Ledger)	46
CAS.2 (Accounts Payable)	47
CAS.3 (Accounts Receivable)	48
CAS.4 (Payroll)	49
CAS.5 (Inventory Management)	49
CAS.6 (Order Entry/Invoicing)	50
CAS.7 (Purchase Order)	50
CAS.8 (Sales Analysis)	51
D. M. ENGLAND & PARTNERS LTD.	
FINAL (Financial Analysis)	629
Milldata	825
Miracle Viewdata	826
Oscar	1029
RADIO-OSCAR	784
D P COMPUTER SYSTEMS	
Flock Modeling and Egg Production Forecasting	153
FORTTRAN Development Library	285
Produce Distribution System	156
Sales Prospect Data Base	1243
DAKTRONICS, INC.	
Process Supervisory Control	426
DANIEL COMPUTING SYSTEMS INC.	
Benchmark Monitor for RSX	181
DATA BLOCKS	
DB*SCAN	234

DATA CENTER MANAGEMENT, INC.

Dialysis Clinic Billing	750
-------------------------------	-----

DATA CONCEPTS INTERNATIONAL, INC.

ILSA (Installment Loan Service Accounting)	1197
--	------

DATA KEY LTD.

A/P (Accounts Payable)	33
A/R (Accounts Receivable)	38
Depreciation Schedule	61
FIFO: FIFO Inventory	68
G/L (General Ledger)	88
IOI: Order Entry	93
Pay (Canadian Payroll)	107
S/A (Sales Analysis)	1241
WIP (Work In Progress)	147

DATA MAGIC

MAGIC*CALC	638
------------------	-----

DATA PROCESSING DESIGN, INC.

CrossWord	1161
DECmail™-PLUS	1085
IB Graph	1089
SAVER	595
WORD-11	1403

DATA PROCESSING SERVICES, INC.

Forced Closed Accounts	632
Money Orders System	639
MPMS (Medical Practice Management System)	773
Official Checks System	641
Safe Deposit Boxes Billing	136
SIMS (Supplies Inventory Management System)	1107
Suspense Ledgers	137

DATA-TAX, INC.

1040 Tax Planner	610
1040 Tax System	610

DATA TRANSLATION, INC.

CPLIB	269
DTLIB	276
RSXLIB	333

DATABASE, INC.

TMR® (The Medical Record)	791
---------------------------------	-----

DATAGRO LTD.

FINAL	629
-------------	-----

DATANEX, INC.

HASP + RSX-11M/RSX-11M-PLUS Interconnect Software	1307
HASP + RT-11 and TSX-PLUS Interconnect Software	1308

DATATEK CORP.

Legal Time and Accounting System	949
--	-----

DATATREND

DataCalc	625
----------------	-----

DAVID BRADWELL AND ASSOCIATES, INC.

CAMPUS (Campus Planning Package)	434
--	-----

1668 Vendor Product Title List

	Page
COLOR (Color Consultants Information System)	1247
PICALC: Lifetime Earnings Estimation	951
DAYLANN MARKETING, INC.	
Q*TEXT	1388
DAYSTROM SYSTEMS, INC.	
MPS (Menu Presentation Software)	1162
Reliant	836
RUNREF	1392
Zetar	843
DAYTON DATA PROCESSING, INC.	
Daymark Wholesale Distribution System	372
DDP APS (Accounts Payable System)	57
DDP ICSF (Inventory Control System)	58
DDP OEIF (Order Entry/Invoicing)	58
DDP PAR (Accounts Receivable)	59
DDP PAS (General Ledger)	59
DDP PAY (Payroll System)	60
DDP PCSF (Purchasing Control System)	61
DCXX SOFTWARE SERVICES	
Dreams	1086
DECCOMP, INC.	
Pro-Accountant: Modular Integrated Accounting System	123
DELTA MANAGEMENT SYSTEMS	
Personnel Administrator	451
School Business Administrator	457
Student Administrator	463
DEMAC SOFTWARE LTD.	
Diskdoctor: Disk Recovery Service	185
FDT (FORTRAN Debugging Tool)	279
Squeezpak: Disk Compress and Optimization	202
DENNISON EASTMAN CORP.	
Bar-Coded Systems	800
Inventory	386
Log and Lumber Inventory Systems	424
Manufacturing Systems	1019
Production Control Systems	405
Shop Floor Control Systems	407
Warehousing Systems	412
DESIGN COMPUTING LTD.	
GINTRAN (Graphics Input and Transformation)	691
THE DESTEK GROUP	
DEBUG/RT (Debugger)	274
Des BASIC (BASIC Cross-Compiler)	875
Des C (C Cross-Compiler)	876
Des Pascal (Pascal Cross-Compiler)	876
OS/ED (Screen Editors)	1386
OS/FT (File System)	585
OS/NET (Local Area Networking)	1329
OS/RT (Real Time O.S. Kernel)	1130
DG SYSTEMS	
REF-11™	955

DIGITAL BUSINESS COMPUTERS

Accounts Payable	14
Accounts Receivable	23
AMS (Asset Management Client Reporting System)	615
Commercial Property Management	1195
General Ledger	82
Inventory	386
Job Costing	222
Order Entry/Invoicing	395
Payroll (Canadian)	113
REPGEN (Report Generator)	1104
Residential Property Management	1202
Sales Analysis	407

DIGITAL COMPUTER SYSTEMS, INC.

GOV-11: Governmental Management System	658
IND/DEV-11 (Industrial Development Management System)	1090
SCRIPTORIUM II: Word/List Processing	1107
WHOLESALE-11	415

DIGITAL DATA SYSTEMS

Viewmaster — Microfilm Indexing and Retrieval System	842
--	-----

DIGITAL GROUP, INC.

CHIPS	371
-------------	-----

DIGITAL MANAGEMENT GROUP LTD.

DMG/FLOW	681
DMG/NET	1293
WORD-11® Encryption Option	1403

DIGITAL SOLUTIONS

EQUUS-11	151
VET-11	792

DIGITAL SYSTEMS, A DIV. OF UCCEL

1040 Tax System	610
Accounts Payable	15
Accounts Receivable	24
Contractor Management System	216
Due-Date Monitoring	64
Equipment Cost	218
ETAKE 2 (Estimating, Takeoff, and Pricing System)	219
FSG (Financial Statement Generator)	79
Payroll System	1172
Practice Management	970
Purchase Order System	223
Random-Number Generator	132
Reporter	134
Tax Planner	650
Time and Billing	973
Time Management	974

DISC

DBL (Data Business Language)	874
------------------------------------	-----

DORROUGH PARKS & CO.

Accountant's Time and Billing System	10
DDM-11 (Due-Date Monitor)	963

DRAGON SYSTEMS

Multi-Tester System	450
---------------------------	-----

1670 Vendor Product Title List

	Page
DSD CORP.	
C-CALC	621
DTRO SOFTWARE	
DTRO BOMP (Bill of Materials Processor) System	377
DTRO CDMS (Comprehensive Distribution Management System)	377
DTRO Forecasting System	1233
DTRO Inventory Management System	378
DTRO Order Processing System	379
DTRO Purchasing System	380
DUXBURY SYSTEMS, INC.	
Duxbury Braille Translator	1068
EASTERN SYSTEMS MANAGEMENT, INC.	
BARCS	1180
PRN-1 Pharmacy Package	783
ECOM SYSTEMS, INC.	
RMS-7	134
EDCAAD, DEPARTMENT OF ARCHITECTURE	
GROUSE Ground Modeling System	498
QUEST Graphical and Text Information System	717
STAG II Drawing System	727
TFONT (Text Font Design Program)	729
EDISON SOFTWARE SYSTEMS	
Convert Tape Utility	232
EDUCATIONAL TESTING SERVICE	
SIGI (System of Interactive Guidance and Information)	461
EEC SYSTEMS INC.	
CACHE-11M/PLUS	182
Converter-22	1278
VM	209
EGT, INC.	
CALDGN (CalComp to Design File) Interface Library	675
CALSIF (CalComp to Standard Interchange Format) Interface Library	676
CELLO — A Cell Organization Utility	677
DUCTSYS — HVAC Ductwork and Fittings Drawing System	683
EDIGRAF — Batch Edit for Intergraph Design Files	684
EVANAC — Project Accounting System	186
GPUC (General-Purpose User Command Package)	497
PIPESYS — Double-Line Piping Drawing System	707
EMDA INC.	
EMDA's Super Car Rental and Control System	1419
ENERGY SYSTEMS TECHNOLOGY, INC.	
ES-LOG	424
ENERTEC, INC.	
Micro Concurrent Pascal (mCP) Cross-Compiler	904
ENGINEERING SCIENCE PROGRAM EXCHANGE	
Engineering Science Program Exchange	443
ENGINEERING SYSTEMS CORP.	
Design Graphix™	489

ENRAF-NONIUS

SDP-PLUS (Structure Determination Package) 1225

ENTERPRISE SYSTEMS GROUP LTD.

Enterprise Distribution 381

EPICOM INC.

ZIN 147

EPSILON

CDL2 Compiler 870

epsitool 1375

epsitool:assemble 278

ERDAS, INC.

ERDAS Image Processing and Geographic Information System 423

ETP SYSTEMS, INC.

/usr/tools 1401

EVANS GRIFFITHS & HART, INC.

BSC/DV (Binary Synchronous Communications Support) 1270

CHARGER 742

Checker 742

DIALUP 1290

FSORT3 576

KDSS (Key-to-Disk Data Entry System) 189

Select 596

TAM (Terminal Access Module) 203

VMSPIP 605

EVANSVILLE DATA PROCESSING CORP.

ABLE® Client Writeup System 8

AiM™ Payables 30

AiM™ Payroll — Interactive 31

AiM™ Receivables and Billing System 31

COMPCARE (Comprehensive Care Centers) 746

EDPC Utilities Package 570

FLEET™ 1420

Housing Authority — Section 8 1196

Housing Authority Tenant Accounting 1197

IN-TOUCH™ 1409

LABELS: The Mailing List System 1091

MAILHOUSE™ 1410

Paramedics Billing 776

PARS: Professional Time, Billing A/R 106

Pathology Billing 778

PER-FORM™ (Personalized Form Letters) 1098

Radiology Billing 785

Retail Furniture System 1412

Suspect-Identification System 952

Wholesaler's Software System 416

EVETS COMPUTERS LTD.

AdA — Advertising Agency System 1064

Evets Accounting Systems 64

Shop Floor Data Collection 1054

EXCELAN, INC.

EXOS 8031 (Excelan Open Architecture Systems) 1302

EXOS 8032 (Excelan Open Architecture Systems) 1303

1672 Vendor Product Title List

	Page
EXECUDATA COMPUTER SYSTEMS	
Turnkey Data	146
EXECUTIVE SOFTWARE, INC.	
EXECmail	1087
EXOFT — SOFTWARE SYSTEMS EXPORT LTD.	
DAIRY-MAN Dairy Herd Management System	150
FEED-MAN Feed Analyzer	152
FEED-MAN Ration Preparation	152
WATER-MAN HNA (Hydraulic Network Analyzer)	157
EXPERT SOFTWARE SYSTEMS N.V.	
MIRA	319
EXPERT SYSTEMS INTERNATIONAL LTD.	
Prolog-1 (Programming in Logic)	325
EXTENDED APPLICATIONS, INC. (EAI)	
ABC	256
ABC/GRAF	672
VOILA!	1402
EXTENDED TECHNOLOGIES CORP.	
AMS (Apparel Manufacturing System)	984
Distribusyst (Distribution Management System)	374
GBMS (General Business Management System)	815
Identopick	385
PCO (Pest Control Operators Management System)	1252
Zip-Check	418
Zip-Man™	419
Zip-Pick™ Warehouse Automation System	419
Zip-Stock™	420
EYRING RESEARCH INSTITUTE INC.	
Triton™ Security System	556
FAIRBROTHER ASSOCIATES	
LOCATE — Multidevice File Locator	580
SPELL-11	1395
FAIRCHILD WESTON	
TELEVT/TELSET/TELDAX: Telemetry Acquisition and Reduction	541
FB CIRCUIT PRODUCTS INC.	
Circuits	478
FES, INC.	
SCORE (Supervisory Control of Refrigeration Equipment)	1052
FINAR SYSTEMS LTD.	
FINAR (Financial Analysis and Reporting System)	630
FINISHED SOFTWARE	
PS (Personal Secretary)	1100
FLORIDA COMPUTER, INC.	
Country Club Accounts Receivable	166
Country Club Golf Handicapping System	166
Country Club Payroll System	166
Data Boss/4	804
FCI Building and Zoning System	655
FCI Fire System	656

	Page
FCI Personnel System	657
FCI Police System	657
FOOD DISTRIBUTOR SYSTEMS, INC.	
Accounts Payable	16
Fixed Asset Accounting	69
General Ledger	82
Order Processing System	397
Payroll	111
Vehicle Cost and PM	1256
FORMAT PHARM-TECH LTD.	
Format International Feed Formulation Systems	153
FORTH, INC.	
polyFORTH II	1132
FOUNDATION FOR SOFTWARE ENGINEERING	
ReadCOBOL™	929
SpeedCOBOL™	939
FOURTH DIMENSION PRODUCTS LTD.	
Administrator 4/11	615
CLIP (Command Language Interpreter)	268
COBEX-11	269
MEMDISK	191
PRO-IV Fourth Generation Language	920
Sprint	201
Super Sort	603
Travel System 4/11	1256
FRYE SOFTWARE UNLIMITED	
PLANIT (Programming Language for Interactive Teaching)	453
FUTURE GENERATIONS, INC.	
The Printer's Companion	1163
FX SYSTEMS CORP.	
SIN-DAS (Single-User Data Acquisition System)	251
G. A. AND T. M. KORN, INDUSTRIAL CONSULTANTS	
BDARE: Dynamic-System Simulation in BASIC	469
DESKTOP (Direct Executing Scientific Computation and Operating Package)	488
DESIRE (Direct-Executing Simulation in Real Time)	489
G. K. FLEMING AND ASSOCIATES LTD.	
Law Firm Management System	948
PMIS (Plant Management Information System)	553
GARY, STOSCH, WALLS & CO., CPA'S	
HIMS (Hospitality Information Management System)	1249
GAYLORD BROS., INC.	
GS-400 Circulation Control System	954
GEJAC, INC.	
ARSAP: Resource Management and Chargeback System	179
HASP	1306
Memory Disk	191
SAL-11 (Structured Assembly Language)	937
SRF (System Reporting Facility)	202
GEMSTONE COMPUTER SERVICE	
LEDGR	820

1674 Vendor Product Title List

	Page
GENERAL ELECTRIC CAE INTERNATIONAL INC.	
SDRC® FATIGUE™	529
SDRC® MODAL-PLUS™	529
SDRC® SABBA™	530
GENERAL MICRO SYSTEMS	
PC-102	1330
PC4010	1330
GENERAL SYSTEMS CORP.	
BASYS (Retail Banking System)	619
CUSYS (Credit Union System)	624
GENESYS GROUP INC.	
EPS (Electronic Publishing System)	811
GBS (Genesys Banking System)	634
GVS/File	1306
Micro/GVS (Genesys Videotex System)	701
GEOBASED SYSTEMS, INC.	
STRINGS (Storage and Retrieval Information Graphics)	728
GEOGRAPHIX, INC.	
Graphix-11™	1088
GIXI INC.	
GKS-GRAL	692
GLOBAL HEALTH SYSTEMS, INC.	
Patient Management System	779
GMW COMPUTERS LTD.	
RUCAPS (Really Universal Computer-Aided Production System)	526
GOLDSCHLEGER EYE RESEARCH INSTITUTE	
GAB (General Program for the Analysis of Biopotentials)	1214
GRAPHIC M*I*S, INC.	
FINGRAPH	686
GSI TRANSCOMM	
TOLAS	410
TOLAS Inquiry and Reporting System	143
HAMMOND SOFTWARE	
SHARE-eleven	1148
SHAREplus	1148
STAR-eleven	1150
VAMP	1355
HARRIS COMPUTER SYSTEMS	
Builder (Homebuilders System)	214
Clothier	1408
EUBA (Electrical Utility Billing and Accounting)	1183
Healthcare	756
Insurance Agency Package	848
Property Management (Rental)	1199
RAFT (Revenue Accounting for Truckers)	1422
Sporty	1414
HARTLEY DATA SYSTEMS, LTD.	
File Transfer System	573
MP System	829

	Page
HATT DATA SERVICE, INC.	
DFRS (Donor Fund Raising System)	808
MDS (Medical Data System)	767
TMS (Trust Management System)	650
HBS MEDICAL MANAGEMENT INC.	
HBS Nursing Home Management Information System	755
HELMSMAN SYSTEMS, INC.	
H-BOMM	1005
H-BUY	1006
H-CHAMP	1120
H-MAKE	1007
H-MRP	1008
H-PLAN/M	1008
H-STORE	1009
HI-TEC	
Micro-Master Data Base Applications Generator	300
HIAS, INC.	
LABPlus (Laboratory Information System)	764
HILLTOWN COMPUTER ASSOCIATES, INC.	
HOST-AGV (Host-Automated Guided Vehicles)	1010
HILLVIEW ACRES CHILDREN'S HOME	
RIM (Relationship Impact Model)	1254
HONEYWELL INDUSTRIAL PROGRAMMABLE CONTROL DIVISION	
RSX-620 (IPC 620 CIM to RSX-11M/M-PLUS Communications Support Package) ..	1050
HORIZON DATA SYSTEMS	
BACK/REST	560
QM (Quick-Mail)	1104
VT (Virtual Terminal)	1358
HOUGHTON MIFFLIN CO./TSC® DIVISION	
Dolphin® Curricula	442
GIS® (Guidance Information System)™	444
HOUSTON ENGINEERING RESEARCH CORP.	
APR (Automated Production Reporting) System	422
Machinery Monitoring Software System	1017
OMS (Oil Movement System)	425
TDDRv (TDC 2000 Driver)	1350
H.R.D. SYSTEMS	
HR&OD (Human Resource & Organization Development)	1170
HUMAN COMPUTING RESOURCES CORP.	
C Test Suite	868
Chariot	51
HCR/BASIC	890
HCR/EDIT	1380
HCR/Pascal	890
RT/EMT (RT-11 Emulator)	1146
UNITY Operating Systems	1155
ICAS COMPUTER SYSTEMS, INC.	
ICAS 1123-Plus (Inventory Control Accounting System)	1409

1676 Vendor Product Title List

Page

ICS COMPUTERS, INC.

MediCom® 770

IDAHO FALLS SCHOOL DISTRICT NO. 91

School Fiscal Accounting 458

School Instructional Packages 459

School Payroll Package 459

School Student Accounting Package 460

IE SYSTEMS INC.

ACCULINK™ 1266

IMAGING TECHNOLOGY INC.

ITEX/Q 239

IMPACT SYSTEMS, INC.

Fundraiser 814

IMSL, INC.

IMSL Library 506

INDENT

INDENT (Initial Data Entry) 816

INDUSTRY SOFTWARE SALES, INC.

Commercial Loan System 623

Culinary Operations Information System 1248

Easypost Insurance Agency Management System 846

Manufacturing Control System 1019

Safe Deposit System 648

INFO-MED, INC.

MEDICOMS (Medical Office Receivables Management System) 770

INFORMATION AUTOMATION INC.

Real-Time Production Monitoring System 1049

INFORMATION CONCEPTS, INC.

Soft Drink Bottler's Package 408

INFORMATION STRUCTURES, INC.

BASE/OE (Base Operating Environment) 800

BMOSS (Building Maintenance Operation Service System) 1181

FMS (Fleet Management System) 1184

INFORMATION/DOCUMENTATION, INC.

CAIRS Government Document Librarian 654

CAIRS Medical Librarian 739

CAIRS Special Librarian 954

INFOSYSTEMS S.A.

IS-LEM Word Processing System 1382

INFOTROL

CARS (Computer Audit Retrieval System) 183

INMAGIC INC

INMAGIC 817

INNOVATEK MICROSYSTEMS INC.

ComLINK: Remote Communications Enhancement 1275

SATT: Real-Time Operating System 1147

TIMETRACK: Project Time Accounting 1177

INTEC SYSTEMS INC.

EMIS (Equipment Management Information System) 1420

INTELLIGENT INDUSTRIAL SYSTEMS, INC.

microMAGIC Microprocessor Software Development Package 905

RTL/2 (Real-Time Language) 935

INTERACTIVE BUSINESS SYSTEMS, INC.

MINI-PHARM (Minicomputer Hospital Pharmacy Package) 772

INTERACTIVE GRAPHIC SYSTEMS, INC.

GAM (Graphic Access Method) 687

GDL (Graphic Display Library) 688

IGOR 1 (Interactive Graphic Operating Resource) 697

INTERACTIVE INFORMATION SYSTEMS, INC.

IFAS (Interactive Financial Accounting System) 89

IMCS (Interactive Manufacturing Control Systems) 1011

INTERACTIVE MINI SYSTEMS, INC.

ISL (Interactive Simulation Language) 507

INTERACTIVE SYSTEMS & SOFTWARE, INC.

EZ Chart 685

HCGS 694

INTERACTIVE SYSTEMS AND MANAGEMENT CORP.

Direct Marketing and Mail Order Management System 1233

InterAP™ 91

InterFad™ 637

InterGL™ 92

InterText™ 1090

InterUpt (ISM Universal Programming Tool) 287

InterRx™ 760

INTERACTIVE TECHNOLOGY, INC.

PRO-RDM (Responsive Data Manager) 325

RDM (Responsive Data Manager) 329

INTERFACE STANDARDS, INC.

QBLIB (CAMAC Subroutine Library) 1222

INTERLAN, INC.

XNS/ITP (Xerox Network Systems Internet Transport Protocols) 1362

INTERLINK COMPUTER SCIENCES, INC.

IBMmvs/DECnet Gateway 1311

INTERMATION CORP.

CT*OS/IT*OS Word Processing 1083

INTERNATIONAL DIGITAL SYSTEMS CORP.

RAM 12™ 406

INTERNATIONAL ELECTRONICS CORP.

M-Net™ (Manufacturing Network) 1017

INTERNATIONAL RESEARCH & DEVELOPMENT COMPANY, LTD.

CADBIRD II 474

INTERNATIONAL STRUCTURAL ENGINEERS, INC.

MBP (Metal Building Program) 510

1678 Vendor Product Title List

Page

INTERPRETIVE DATA SYSTEMS, INC.

Physician Systems 781

INTERSYSTEMS CORP.

M (MUMPS) 1123

M/11+ 1123

INT'L COMPUTER COLLECTIONS, INC.

Collection-Plus 623

IPT CORP.

Tracer C Debugger 353

ISKRA SOFTWARE INTERNATIONAL

FORMATIX 814

ISTITUTO DI ELETTRONICA

Stage 2/RXS 940

J & S ASSOCIATES

LP (Linear Programming) 1016

MATCHUP: Assignment 1171

RISKAN1/RISKAN2 (Risk Analysis — General/Risk Analysis — Accounting) 971

JADTEC, INC.

Accounts Payable 16

Accounts Receivable/Billing 28

Executive Information and Action Screen 963

General Ledger and Financial Reporting 86

Order Entry/Inventory Control 105

Payroll 111

Personnel Record System 1174

JAMES F. HAYES & CO.

Real Information 1200

JBH ASSOCIATES, INC.

Chronometrix 962

JMI SOFTWARE CONSULTANTS

BASTOC™ (BASIC to C) 864

C Cross-Compiler for National Semiconductor Series 32000 865

C EXECUTIVE, Release 2.0 1115

JMI Portable C Library 893

JOHN A. KEANE AND ASSOCIATES

QMS PROGRAMS® Computer Software/Cost of Quality and Material Review 1041

QMS PROGRAMS® Computer Software/Customer Complaint and Field-Failure Analysis 1041

QMS PROGRAMS® Computer Software/Defect Analysis 1042

QMS PROGRAMS® Computer Software/Environment 1042

QMS PROGRAMS® Computer Software/Finished Goods Release 1043

QMS PROGRAMS® Computer Software/Instrument Calibration 1043

QMS PROGRAMS® Computer Software/Logistics 1044

QMS PROGRAMS® Computer Software/Materials 1044

QMS PROGRAMS® Computer Software/Optimum Inspection Strategies 1045

QMS PROGRAMS® Computer Software/Process Capability Studies 1045

QMS PROGRAMS® Computer Software/Product Shelf Life and Stability 1046

QMS PROGRAMS® Computer Software/Statistical Process Control 1046

QMS PROGRAMS® Computer Software/Supplier Ratings 1047

QMS PROGRAMS® Computer Software/What-If Studies 1047

	Page
JOHN R. CASWELL, CONSULTANT, P.E.	
Caswell Model (Apprehend)	1418
JPY ASSOCIATES LTD.	
DATA-LOCK®	233
JSI	
JSI/MIS (John Snow, Inc./Medical Information System)	762
K & H COMPUTER SYSTEMS (CANADA) LTD.	
PREMINI	970
KARLSEN & CHRISTENSEN, CPS'S, P.C.	
Campaign Finance Program	654
KARMAK SOFTWARE & COMPUTER SERVICE	
WDS/2 (Warehouse Distributor System)	413
KATHOLIEKE UNIVERSITEIT LEUVEN	
ABACUS	430
FITPACK Curve and Surface Fitting Package	1212
Prolog	453
QUADPACK	1223
KEILTRONIX, INC.	
ATOMS (Advanced Textile Operations Management Systems)	985
DPM (Dyeing Process Management)	1002
KINETICS SYSTEMS CORP.	
PC/DBS (Process Control Data Base System)	1030
KMK ENTERPRISES, INC.	
Government-11	659
MAP-11 (Municipal Accounts Payable)	660
MAR-11 (Municipal Accounts Receivable)	661
MGL-11 (Municipal General Ledger and Financial Reporting)	662
MPY-11 (Municipal Payroll)	662
Tax-11	666
Utility-11	1189
VEH-11 (Vehicle Registration)	667
Voter-11	668
KNOX DATA, INC.	
Innkeepers Management System	1250
KONELAR CORP.	
KM.SYS — Device Driver for Konelar Extended Memory	289
KXMLNK (Konelar Extended Memory Linker)	291
KRATOS, INC.	
SISINF	339
KUBERNAN, INC.	
KRONIX-11™	947
KRONIX-PC™	948
LA MESA RESEARCH AND DEVELOPMENT	
FCP (FORTRAN Code Preprocessors)	881
FORMAT (Forms Management Transaction System), Version 5.1	283
LEATHERHEAD FOOD RESEARCH ASSOCIATION	
CAIRS (Computer-Assisted Information Retrieval Systems)	801

LENNARD SYSTEMS

IRIS-MINI	577
-----------------	-----

LESIFCO, INC.

FUTURETECH — Mail Order Processing System	1235
SEARCH/PURGE — Mailing List Deduplication Program	1243

LEXINGTON PUBLIC SCHOOLS

LEADS (Local Education Agency Data System)	448
--	-----

LIOCS CORP.

Perspective/700 Accounts Payable	116
Perspective/700 Accounts Receivable	116
Perspective/700 Bill of Materials System	1031
Perspective/700 General Ledger	117
Perspective/700 Inventory Management	399
Perspective/700 Order Processing	400
Perspective/700 Sales Analysis	1239

L.N.K. CORP.

IPACS (Interactive Pattern Analysis and Classification System)	1216
--	------

LOGICAID LTD.

D™	802
PENQUIN™	399
RTPack	1147
VCC (The Video Outlet Control Center)	1415
VN	1357
VTAG	175
XREF	605
YH for DH11/DHV11	1363
YL for DLV11J	1364
YZ for DZ11/DZV11	1364
ZORT	606

LOGICRAFT, INC.

Cardware Disk Subsystem	1161
CP/M-86® for DIGITAL	1116
PC-DOS for DIGITAL	1131

LOGISTICS SUPPORT

Pigeonhole	1422
------------------	------

LOGO COMPUTER SYSTEMS INC.

Logo for the Professional 300	449
-------------------------------------	-----

LOKI ENGINEERING, INC.

MAGIC/L™	903
----------------	-----

LOVELACE LAWRENCE & CO.

A-CLASS	978
---------------	-----

MACATAWA COMPUTER SERVICES, INC.

MUNIS (Municipal Information Systems)	663
---	-----

MACHINE INTELLIGENCE AND INDUSTRIAL MAGIC

RECOVR (RSX Corrupted Disk Recovery Utility)	590
--	-----

MANAGEMENT SCIENCES

Medical Office Manager	768
------------------------------	-----

MANAGEMENT SERVICES CO.

Property Management System	1199
----------------------------------	------

MANCOS COMPUTERS

Distribution — Wholesale and Retail	375
Electronic Component Distribution System	380
Freight Forwarder System	383
Point of Sale	1411
Purchase and Supply Control	406

MANUFACTURING DATA EXCHANGE

MAESTRO	1018
---------------	------

MANUFACTURING DATA SYSTEMS INC.

EQUINOX™	1003
----------------	------

MANUS SERVICES CORP.

Demonstrator	808
DSKBLD (RSTS/E Disk-to-Disk Utility)	568
MBS AP (Manus Business Systems Accounts Payable)	95
MBS AR (Manus Business Systems Accounts Receivable)	96
MBS ASR (Manus Business Systems Automatic Stock Replenishment)	389
MBS GL (Manus Business Systems General Ledger)	97
MBS IM (Manus Business Systems Inventory Management)	389
MBS OP (Manus Business Systems Order Processing)	390
MBS PO (Manus Business Systems Purchase Order Management)	391
MBS SA (Manus Business Systems Sales Analysis)	1237
MBS WD (Manus Business Systems Automotive Parts Warehouse Distributor System)	391
MODS (Manus Oil Dealer System)	392
RESPOND	198
RMSREO (RMS Indexed File Reorganization Utility)	591

THE MAPSS CORP.

MAPSS = MAGIC (Management and Analysis of Geographic Characteristics Information)	700
---	-----

MARC SOFTWARE INTERNATIONAL, INC.

WordMARC Author™	1404
WordMARC Composer™	1405

MARI KEL

RBS (Radiology Billing System)	786
--------------------------------------	-----

MARKET DATA RESEARCH, INC.

RESPAC (Real Estate Sales Data Retrieval Package)	1202
---	------

MARQUEE COMPUTING

W	209
WUTIL	210

MARTEK, INC.

AIMS (Advanced Integrated Manufacturing Systems)	983
--	-----

MASTER CLASS CORP.

CAST® (Computer-Assisted Self-Training)	435
---	-----

MAYDA SOFTWARE ENGINEERING

SDP	338
-----------	-----

MBA COMPUTER SERVICES, INC.

Wholesale Lumber Management	1244
-----------------------------------	------

MBA SYSTEMS AUTOMATION, INC.

MOCS (Master Operator Control System)	192
NCS (National Creditor System)	101

1682 Vendor Product Title List

	Page
PET (Performance Evaluation and Tuning)	193
XWORD	1111
MCBA, INC.	
A/D (Fixed Assets and Depreciation), MCBA, Inc.	29
A/P (Accounts Payable), MCBA, Inc.	33
A/R (Accounts Receivable), MCBA, Inc.	38
BOMP (Bill of Material Processor), MCBA, Inc.	989
COP (Customer Order Processing), MCBA, Inc.	998
G/L (General Ledger), MCBA, Inc.	88
I/M (Inventory Management), MCBA, Inc.	1010
J/C (Job Costing), MCBA, Inc.	1015
L/P (Labor Performance), MCBA, Inc.	964
MRP (Material Requirements Planning), MCBA, Inc.	1024
P/O (Purchase Order and Receiving), MCBA, Inc.	1037
P/R (Payroll), MCBA, Inc.	1175
R/W (Report Writer), MCBA, Inc.	1393
SFC (Shop Floor Control), MCBA, Inc.	1053
SPC (Standard Product Costing), MCBA, Inc.	1056
SPR (Standard Product Routing), MCBA, Inc.	1057
MCC POWERS	
Building/Energy Management System (Kernel) — System 600	550
Color Trend Plot — System 600	679
DDC/PPCL Compiler — System 600	875
Duty Cycling — System 600	551
Maintenance Management — System 600	553
Peak Demand Limiting — System 600	553
Start/Stop Time Optimization — System 600	556
MCDONNELL DOUGLAS HEALTH SYSTEMS	
HDC + (Hospital Data Communication)	755
LabCom + ®	763
RxCom	787
MCHUGH, FREEMAN AND ASSOCIATES, INC.	
ALP (Address List Processor)	1078
CALC (Accounting Calculator), Version II	1080
Distribution System (Wholesale/Retail)	376
M/APS (Menu/Authorization Processor System)	296
SUBS (Standard Subroutine Library), Version II	346
MCS, INC.	
MESTAMED	772
POS/MIMS: Point-of-Sale System for Lumber Yards/Home Building Center Industry	1412
MEDICAL, EDUCATIONAL AND GOVERNMENTAL APPLIED SYSTEMS	
Radiology Accounts Receivable Management System	785
MEDISYS	
MEDISYS	771
MEDITECH	
HIS (Hospital Information System)	757
MIIS Standard	1125
MIIS/MAGIC (MEDITECH Interpretive Information System)	1126
MERIDIAN TECHNOLOGY CORP.	
LAD/11 (Local Area Devices) for RSX	579
MICRO DATA BASE SYSTEMS, INC.	
MDBS III	298

MICRO MANUFACTURING SYSTEMS, INC.	
MCS-3 (Manufacturing Control System)	1020
MICROFINANCIAL CORP.	
Flexware Accounting Package	73
Flexware Accounts Payable	74
Flexware Accounts Receivable	74
Flexware Application Development System	281
Flexware General Ledger	75
Flexware Inventory Control	76
Flexware Job Costing	631
Flexware Order Processing	76
Flexware Payroll	77
Flexware Purchasing	78
Flexware Sales Analysis	1234
Flexware Spreadsheet	78
THE MILLENNIUM CO.	
Milltech: Melt Management System	1021
MINE DATA COMPUTER SERVICE, INC.	
FACTS V Systems of Tire Control	628
MINITAB, INC.	
Minitab® Data Analysis Software	1218
MITCHELL MANAGEMENT SYSTEMS, INC.	
MAPPS (Management and Project Planning System)	966
MNEMONICS, INC.	
Marketab®	1236
MODULAR DATA SYSTEMS, INC.	
ADACS (Advanced Distributed Acquisition and Control System)	980
THE MONEY GROUP	
PORTSIS™ Investment Management	644
MOORE INSTRUMENTS LTD.	
MYCRO/11 Process Management System	1024
MORGAN EQUIPMENT (AUST.) PTY. LTD.	
MSPPOOL	1385
MORTGAGE SYSTEMS AND SERVICE, INC.	
Mortgage Loan Closing Software	1198
MOSAID INC.	
MOSFIT (MOS Transistor Model Parameter Extraction Package)	512
MULLER-MUGNO CORP.	
MACS-11 (Media Access and Conversion System for PDP-11)	241
MULTICEPT CORP.	
AIM/AP (Accounting Information Manager for Accounts Payable)	32
AIM/FOD (Accounting Information Manager for Fuel Oil Delivery)	368
AIM/PR (Accounting Information Manager for Payroll with Cost Accounting)	32
MULTINATIONAL SOFTWARE, INC.	
/rdb™ (Relational Data Base Management System)	588
MULTIWARE, INC.	
MGSP (Multiware Graphics Subroutine Package)	701

1684 Vendor Product Title List

	Page
THE MUMPS COLLABORATIVE, INC.	
Anatomic Pathology	734
CO-LAB	745
Collaborative Clinic System	746
Medical Records System	769
NAB SOFTWARE SERVICES, INC.	
MTLIB (Magnetic Tape Driver Library and Utilities)	243
TSRUAP (A TSX-PLUS™ System Resources Utilization Accounting Package)	205
NANOBIT CO.	
NANOBIT Disk Sort	584
NATIONAL INFORMATION SYSTEMS	
NYPLAN	640
VUE	975
NATIONAL INSTRUMENTS	
GPIB Software	286
NEAL NELSON & ASSOCIATES	
Access Control	178
Accounting, Integrated	11
Accounts Payable	17
Accounts Receivable	25
Cost Estimating	1232
General Ledger	83
Inventory Control	388
Job Costing	94
Order Processing	396
Payroll	112
Purchase Order Accounting	132
Sales Analysis	1241
NEIL FREEMAN CONSULTANTS	
Buddy's Membership Dog Club Module	39
NFC Mailing Module	1096
NFC Payroll Module	102
NFC Professional Accounting	102
NFC Property Management	103
NETWORK RESEARCH CORP.	
FUSION™	1304
NETWORK SYSTEMS CORP.	
BFX (Bulk File Transfer)	1268
NETEX (Network Executive)	1328
NICOLET COMPUTER GRAPHICS DIVISION	
FPS (Fundamental Plotting Subroutines)	496
Functional Subroutines	496
TYPSET — Digitized Character Subroutines	1401
ZCHART — Business Graphics	1112
NORTH DAKOTA STATE UNIVERSITY	
TED (The NDSU Terminal Editor)	1399
NORTHWEST DIGITAL SOFTWARE INC.	
RPM (RSTS/E Performance Monitor and Optimization Tool)	199
NORTON-MURPHY INTERNATIONAL, INC.	
Circulation Management	1065
Complete Accounting Package	54

	Page
NMI Customer Profile Package	1237
Personnel Searcher	1174
NOVUS SYSTEMS TECHNOLOGY LTD.	
IGOR Document Preparation System	1381
NUCLEAR DATA, INC.	
Gamma Spectroscopy Applications Package	1214
Nal Data Reduction	1220
Neutron Activation Analysis	1220
NUMERICAL ALGORITHMS GROUP LTD.	
GLIM-3	1215
MLP (Maximum Likelihood Program)	1219
NAG FORTRAN Library Service	1219
NUMERICAL CONTROL COMPUTER SCIENCES	
NCL — Interactive Graphics Software	1025
OAKWOOD COLLEGE	
COSAS (Comprehensive On-Line Student Accounting System)	441
OASYS	
CDOC — C Source Code Format Utility	267
Cephes Math Function Library	476
CLUE™ (C (Source Level) Linecount Utility)	268
Motorola 68000/10 Cross- and Resident Assembler	320
OBJCON (General-Purpose Object Module Conversion Utility)	244
PMM (Paged Memory Manager)	324
S-TRAN™ BASIC to C Translator	335
SNDRVC (Send/Receive File Utility)	339
STM (Storage Manager)	345
SYM (Symbol Manager)	347
OLYMPUS SOFTWARE, INC.	
UltraCalc®	1164
OMTOOL CORP.	
SOFTBOL	939
ON TRACK SYSTEMS	
Lock-11	1122
ONTARIO SYSTEMS CORP.	
FACS (Flexible Automated Collection System)	1088
OPUS, INC.	
MAMS (Municipal Accounting Management System)	660
ORACLE CORP.	
ORACLE® Relational Data Base Management System	829
OREGON SOFTWARE	
Pascal-2™	914
Pascal-2™ Cross-Compiler to Target 68K with Concurrency Package	322
SourceTools™	345
ORIGIN, INC.	
Call Tracker	1231
P-E INFORMATION SYSTEMS LTD.	
FINESSE	630
STRADIS	409

PALACE COMPUTER SERVICES, INC.

MATCHMASTER™ 581

PALETTE SYSTEMS INC.

PALETTE™: Computer-Aided Drafting and Design 705

PEAT, MARWICK, MITCHELL & CO.

GIMS (Government Information Management System) 658

PM11 Accounts Receivable 121

PM27 Accounts Payable 121

PM28 General Ledger/Financial Reporting 122

PM32 Order Processing/Inventory/Sales Analysis 403

PMM/MBS Job Cost System 969

PECAN SOFTWARE SYSTEMS, INC.

Advanced Development Tool Kit 258

FORTRAN-77 and BASIC Runtime Units 284

FORTRAN-77 Compiler 883

KSAM (Keyed Sequential Access Method) 290

p-System™ Version IV.2.1 1130

SofTeach® for UCSD Pascal® 462

UCSD Pascal® Compiler 941

PENNINGTON SYSTEMS INC.

CONPAX 232

XFORM 362

PENTAMATION ENTERPRISES, INC.

Bacteriology Module: Leadership Series™ 736

Blood Bank Module: Leadership Series™ 737

Clinical Support Systems: Leadership Series™ 744

Group Purchasing System 754

Laboratory Module: Leadership Series™ 763

Laundry Module: Leadership Series™ 764

Leadership Series™ Hospital Information System 765

Pharmacy Module: Leadership Series™ 781

PERCEPTION TECHNOLOGY CORP.

BT-II Voice Response Peripheral 1271

PEREGRINE SYSTEMS, INC.

Peregrine Four 323

PNMS III (Peregrine's Network Management System III) 193

PERSONAL EFFICIENCY PROGRAMS

SR/SE II (Survey of Reading/Study Efficiency) 462

PHILIP LIEBERMAN & ASSOCIATES, INC.

Episodic Billing System 752

PHILIPS ELECTRONIC INSTRUMENTS, INC.

Automated Powder Diffraction Data Collection and Analysis 1208

PINE INSTRUMENT CO.

PICAM 1032

PIONEER MEDICAL SYSTEMS

CAMS (Computerized Arrhythmia Monitoring System) 740

PLAN PLUS UK

X 1405

PLANNED MAINTENANCE SYSTEMS, INC.

FMS (Facility Management System) 551

PLESSEY PERIPHERAL SYSTEMS

Plessey-CALC 1098

Plessey-WP (Plessey Word Processor) 1098

PLYCOM SERVICES, INC.

Accounts Payable 18

Accounts Receivable 25

Fixed Assets 72

General Ledger 84

Payroll 113

Plycom Core Accounting Systems 120

PM COMPUTER SERVICES CO.

Budgetary Accounting 40

County Treasurer's Investment Management 624

Dog License System 655

Government Payroll System 659

Title System 666

Treasurer's General Ledger and Warrant Reconciliation 144

Voter Registration System 669

POLYCHROME CORP., SYSTEMS DIVISION

KEREN 1069

POPULATION COUNCIL

CPS Graphics Package 680

CPS Word Processing System 1082

PORTABLE SOFTWARE INC.

PMS (Property Management System) 1198

POWER TECHNOLOGIES, INC.

IUC (Interactive Unit Commitment) 507

PSS/2P (Power System Simulator) 521

PSS/O-S (Power System Simulator for Operations) 522

PRECISION BUSINESS SYSTEMS, LTD.

FTX Funds Transfer System 633

PRIOR DATA SCIENCES LTD.

GKS/C 692

TESTWARE 351

PRITSKER & ASSOCIATES, INC.

TESS™ (The Extended Simulation System) 729

PRO COMPUTER SCIENCES, INC.

PRO-IV Applications Processor 920

PROCESS CORP.

AUTO-BOP 985

AUTO-CHEM 468

AUTO-MET and Q-VAR 986

MODLNK 1326

PC-Forms 1386

TIP (Terminal Interface Program) 1400

PROCESS SOFTWARE CORP.

FTP (TCP/IP File Transfer Program) 1304

PROM Programming Software 248

1688 Vendor Product Title List

	Page
VIOS (Video Input/Output and Processing Software)	254
PRODUCTIVITY PRODUCTS INTERNATIONAL, INC.	
Objective-C	913
PROFESSIONAL COMPUTER SERVICES	
Constructimate	215
Job Shop Management	1251
PTB (Professional Time and Billing)	131
PROFESSIONAL COMPUTING RESOURCES, INC.	
AADC (Advanced Automated Data Collection)	979
COMIT (Communications Management Information Tool)	1181
PROFESSIONAL DATA PROCESSING, INC.	
Automated Voucher Payment System	735
Hospital Accounting and Management System	758
Telephone Accounting and Billing System	1187
PROFESSIONAL SYSTEMS INTEGRATION	
NHIS (Nursing Home Information System)	776
PROFITEER CO.	
PROOF: A Proofreading Program/Spelling Checker	1386
PROJECT SOFTWARE LTD.	
Action List	960
Drawing Register	682
Estimating System	218
MANEX (Manpower Expenditure Recording)	965
PCM (Project Cost Model)	968
PROJECTS UNLIMITED, INC.	
ProBiz™ Accounts Payable	127
ProBiz™ Accounts Receivable	128
ProBiz™ General Ledger	129
ProBiz™ Job Costing/Work in Process	1039
ProBiz™ Order Processing and Inventory Control	404
ProBiz™ Payroll	129
ProBiz™ Purchasing Management	130
PROPERTY TECHNOLOGY, INC.	
MUNIS/PLUS	664
REAS (Real Estate Appraisal System)	664
PROSIG COMPUTER CONSULTANTS LTD.	
ADIOM (Analog Digital Input/Output Modules)	558
DATS	680
DRWLIB	683
FTU (File Transfer Utility)	576
PRO/SOFT	
DFM (Dental Financial Manager)	750
PUGH-ROBERTS ASSOCIATES, INC.	
Documentor/F	1373
DYNAMO	879
PYROMET SYSTEMS, INC.	
MMS (Materials Management System)	1022
QEI, INC.	
VTUMC (Virtual Terminal Routine for UNIVAC 1100 Systems)	1360

QUADRATRON SYSTEMS, INC.

Q-CALL	1100
Q-DATE	1101
Q-FORM	1101
Q-MAIL	1101
Q-MATH	1102
Q-MENU	1102
Q-NOTE	1102
Q-OFFICE	1103
Q-ONE	1103

QUADREX CORP.

FLIC	494
------------	-----

QUODATA CORP.

ARCHON: ADMISS	430
ARCHON: ADMS (Association Data Management System)	797
ARCHON: BILLS	431
ARCHON: FRS (Financial Reporting System)	617
ARCHON: FUND-AL	797
ARCHON: PAY	1168
ARCHON: QDMS (Quodata Data Management System)	798
ARCHON: STUDENT	431
FINAID	444

RADIO COMPUTING SERVICES

Barter	1064
Person System	1070
Sampler	1071
Selector	1072
Storm Center	1072

RADLEY BUSINESS COMPUTERS

Automotive Release Accounting	986
CPA Payroll	55
Doctor Billing	751
Microlink	822

RAPITECH SYSTEMS, INC.

FORTRIX-C (FORTRAN to C Translator)	889
---	-----

RAVEN INDUSTRIES, INC.

IMS-8 (Integrated Mill-Management System-8)	155
PFS	156

RAXCO, INC.

RABBIT-1 Resource Accounting, Auditing, and Billing System	194
RABBIT-2	195
RABBIT-3 System Monitor	196
RABBIT-4 Security System	196

RAY GREEN AND ASSOCIATES

INVENT: Inventory for Manufacturing Companies	1013
MAILER: Mailing List System	1095
PACKET: Bill of Materials for Manufacturing	1030
QUOTE: Manufacturing Cost Estimating	1048
SCHED: Manufacturing Scheduling System	1052

REALISE

REALISE Real Estate Office Automation System	1201
--	------

1690 Vendor Product Title List

	Page
RECEPTORS INC.	
Receptor System 8835	523
RECOM ENGINEERING LTD.	
RCMMAIL: Mail Merge	1104
REMTECH, INC.	
NCTAPE (Numerical Control Tape Processing System)	1027
VTERM (Virtual Terminal Program)	1359
RESEARCH SYSTEMS, INC.	
IDL (Interactive Data Language)	1216
RESOURCE SYSTEMS CORP.	
Accounts Payable	18
Accounts Receivable	26
Fixed Asset Depreciation	70
General Ledger	84
Inventory	93
Order Entry	104
Payroll	1172
Resource Accounting Module	197
RGTI SYSTEMS SOFTWARE	
MMS-R Radio-Dispatched Material Management System	1023
RHA (MINISYSTEMS) LTD.	
RLUTIL	591
RHINTEK INC.	
Rhintek Plot Package	719
RHODNIUS INC.	
Mistress "Plus"	826
Mistress Relational Database Management System	827
Mistress/32	828
RIVERDALE COUNTRY SCHOOL	
ENGDRIL (English Drill) Package	443
Riverdale Math Package	455
RMI	
RES	524
ROBERT W. HUNT & ASSOCIATES	
Arts	162
ROEING CORP.	
COMPU-CHART — Medical Records Program for Long-Term-Care Facilities	747
COMPU-TRIEVE — Report Writer and Data Manager	747
LT/AMS — Financial Management for Long-Term-Care Facilities	765
LT/CARE — Accounts Receivable for Long-Term-Care Facilities	766
LT/PRX — Payroll and Personnel Management for Long-Term-Care Facilities	766
MEDREP — Systems for Preparation of Medicaid/Medicare Reports	772
ROSS SYSTEMS, INC.	
MAPS/DB	821
MAPS/GRAPH	699
MAPS/MODEL	639
RTZ COMPUTER SERVICES	
FPS80	633
GCIS (Group Corporate Information System)	815

	Page
GL Eleven	87
On-Line Share Registration	641
Order Eleven	393
PRO-FPS	645
RUBICON CORP.	
Billing and Accounts Receivable System	737
Comprehensive Blood Bank System	746
Hospital Laboratory System	758
Independent Laboratory System	759
intRlab	761
RUF CORP.	
Accounts Payable System	20
Accounts Receivable System	28
CLASS—Education Accounts Payable A/P System	436
CLASS—Education Admission System	436
CLASS—Education Alumni/Development System	437
CLASS—Education Billing and Receivables System	437
CLASS—Education Personnel System	438
CLASS—Education Registration System	438
CLASS—Educational Financial Aid System	438
CLASS—Educational Financial System	439
CLASS—Educational Payroll System	439
CLASS—IMPRS	439
CLASS (College-Level Administrative Software System)	440
DataCare	749
General Ledger System	87
GENSIM-IMPRS Financial Simulator	635
IMPRS	816
MAINSY-IMPRS Preventive Maintenance System	552
Order Entry System	395
ORDERS Wholesale Distributor System	397
Payroll System	114
RNI (WRDPRO-Word Processing/Text Editing)	1105
TIMANA-IMPRS Time-Analysis System	1177
UTIANA-IMPRS Utility Analysis System	1189
RWT CORP.	
NCNET	1026
S & H COMPUTER SYSTEMS, INC.	
COBOL-Plus	873
PRO/COBOL-Plus™	921
PRO/RTSORT™	588
PRO/TSX-PLUS™	1134
RTSORT™	594
TSX-PLUS™	1152
S-COM COMPUTER SYSTEMS ENGINEERS LTD.	
BASIX	801
SALERNO COMPUTER SYSTEMS	
Salerno/SPM + (Statistical Process Monitoring)	1050
SANDFORD COMPUTER SYSTEMS	
VIDEOPRO	1356
THE SANTA CRUZ OPERATION, INC.	
Lyrix™ Word Processing System	1093
Multiplan® Electronic Worksheet	639
UNIX* System Tutorials	465

1692 Vendor Product Title List

	Page
XENIX® Operating System	1157
SAT COM	
PRODSTAR-MRP	1039
SATURN SYSTEMS, INC.	
SATURN-BASE®	838
SATURN-CALC™ Electronic Spreadsheet	648
SATURN-GRAPH™	723
SATURN-WP™ Word Processing/List Processing	1394
SAUER COMPUTER SYSTEMS	
Sauer Library	136
SAVANT ENTERPRISES	
MIMER: The Software Machine	825
S.C.A. — SANCHEZ COMPUTER ASSOCIATES	
PROFILE — Integrated Banking System	646
SCHMIT, SMITH & RUSH	
REA Accounting Software	1187
SCICON U.K. LTD.	
MICRO FEED	155
MICRO LP	1020
MINI LP	1022
SCIENCE APPLICATIONS INTERNATIONAL CORP.	
GOULD/DEC Data Link	1305
Q-NET — Interface to DECnet	1339
S.C.O.	
SENTRY-11	200
SCRIBE DATA SYSTEMS (A FAXON CO.)	
Scribe Subscription and Merchandise Fulfillment System	1071
SEED SOFTWARE CORP.	
SEED DBMS (Data Base Management System)	838
SERIAL LAB PRODUCTS	
BASIC and FORTRAN Support Packages	469
SETPOINT, INC.	
ABCON (Automated Batch Control)	980
SETCON: Process Control Software for Industrial Processes	1053
SGM, INC.	
RCS-7	1048
SHARED SYSTEMS SUPPORT LTD.	
CHEM-COST	991
EXDOC (Export Documentation System)	381
SIGMATICS COMPUTER CORP.	
SACCPAY (Accounts Payable Package)	135
SACCREC (Accounts Receivable Package)	135
SGENLED (General Ledger Package)	136
SIGNAL TECHNOLOGY, INC.	
ILS (Interactive Laboratory System)™	505
ILS/SKY	505

SIMCO, INC.

CP-11 Coupon Redemption System	1232
IV-11 Inventory Control System	221
PMS (Preventive Maintenance Scheduling System)	1036
SL-11 Amusement Devices Accounting System	173
Timeshare Contract Management System	1255

SIMULATION SYSTEMS LTD.

ISIS 80 Continuous System Simulation Program	288
--	-----

SIRA LTD.

SAL Low-Cost Cross-Assemblers	937
-------------------------------------	-----

SKIPPACK SYSTEMS GROUP

MACRO-05 MC6805 Cross-Development Tools	895
MACRO-09 MC6809 Cross-Development Tools	895
MACRO-65 6502 Cross-Development Tools	896
MACRO-68 MC68000/10 Cross-Development Tools	897
MACRO-80 8080/8085 Cross-Development Tools	897
MACRO-86 8086/8088 Cross-Development Tools	898
MACRO-8K Z-8000/1/2/3/4 Cross-Development Tools	898
MACRO-MC MC6800/01/02/03/08 Cross-Development Tools	899
MACRO-Z8 Z-80 Cross-Development Tools	901
SCCS (Source Code Control system)	338

SKY COMPUTERS, INC.

SKYMNK Software Support	533
SKYPORT	597

SMITH, ABBOTT, AND COMPANY, INC.

Accounting	614
AUTOPRO (Automatic Programming)	799
Distribution Management System	375
Membership	967
Practice Management System	782

SOFTTEST

Computer Guided Probe — Electronic Fault Isolation Package	482
THE MENU SYSTEM	300
SofForms	340
SofGram Electronic Communications	1108

SOFTFIN

INTFIN (Internal Financing Package)	638
INTRST.PKG	638

SOFTLAB GMBH

CAMIC (Computer-Aided Microprocessing)	266
--	-----

SOFTRAN CORP.

CADO2C (Conversion Package for CADOL Software)	231
--	-----

SOFTWARE CONSULTING ENTERPRISES, INC.

Real Estate Information System	1200
TRON Accounts Payable	144
TRON Accounts Receivable	145
TRON General Ledger	146

SOFTWARE EXPRESS

APPGEN Accountants Client Write-Up	34
APPGEN Accounts Payable	35
APPGEN Accounts Receivable	35
APPGEN Applications Generator	259

1694 Vendor Product Title List

	Page
APPGEN Fixed Assets	36
APPGEN General Ledger	37
APPGEN Inventory/Order Entry	369
APPGEN Job Cost	37
APPGEN Payroll	1168
APPGEN Professional Time Reporting	616
THE SOFTWARE HOUSE, INC.	
General Ledger, Budgeting, and Checkwriter	635
Third-Party Claim Payment and Billing System	791
TSH/CRIS — Credit Insurance Administration	850
TSH/Ordinary Insurance Administration	850
SOFTWARE INNOVATIONS, INC.	
AVL	859
BASIC-L	861
VC	1110
VF	1110
SOFTWARE IRELAND LTD.	
PHENIX PASS	117
SIBOL (Software Ireland Business-Oriented Language)	938
SOFTWARE MAINTENANCE AND DEVELOPMENT SYSTEMS, INC.	
Aide-De-Camp™ Software Engineering Environment	258
SOFTWARE RESEARCH ASSOCIATES	
TCAT/C (Test Coverage Analysis Tool)	350
SOFTWARE RESULTS CORP.	
3780 COMBOARD™	1260
HASP COMBOARD™	1307
SOFTWARE SYSTEMS GROUP	
LazerCalc	240
SOFTWARE TECHNIQUES, INC.	
DISKIT	1117
RPM	198
UTL	208
SOLUTIONS DECK	
SOLUTIONS DECK Design	340
SOLUTIONS DECK Dictionary	599
SOLUTIONS DECK DMS	341
SOLUTIONS DECK Extract	342
SOLUTIONS DECK Master	343
SOLUTIONS DECK Report Writer	343
SOLUTIONS DECK Transaction	344
SOSY S. A.	
Series IV System	938
SPACE-TIME SYSTEMS, INC.	
BOCS (Box Office Computer System)	163
SPARTIN SYSTEMS	
Group Health and Life Insurance	846
Permanent Placement Personnel System	1173
Temporary Services Personnel System	1176
SPINNER DATA SERVICE, INC.	
FPS (Fruit Packing System)	154
PBS (Produce Brokerage System)	156

SPOKANE COMPUTER SERVICES, INC.

Data Entry Interface to Remote Hand-Held Computer	1280
FACS — Accounts Payable	65
FACS — Accounts Receivable/Sales Analysis	65
FACS — Fixed Asset Management	66
FACS — General Ledger/Job Costing	67
FACS — Inventory and Order Entry	382
FACS — Job Costing	219
FACS — Job Order System	383
FACS — Newspaper Circulation and Accounts Receivable	1068
FACS — Patronage Accounting	628
FACS — Payroll	67

SPRINGFIELD COMPUTER CONSULTANTS, INC.

ACCESS Financial Systems	614
--------------------------------	-----

SPS SOFTWARE PRODUCTS & SERVICES, INC.

EPOS (Engineering- and Project Management-Oriented Support System)	810
--	-----

SPSS INC.

SPSS-11™	839
SPSS/PRO™	840

S.R.B. INTERNATIONAL LTD.

BAS (Budgetary Accounting System)	39
OPS (On-Line Payroll System)	103
POM/T (Purchase Order Management/Tendering System)	644
RAS (Receivable Accounting System)	133

STAFF COMPUTER TECHNOLOGY CORP.

PRO (Process-Oriented Software)	1038
---------------------------------------	------

STANLEY E. CLARKE AND ASSOCIATES, INC.

PAX	642
-----------	-----

STANLEY VIDMAR INC.

TMS/2000 Tool Management System	1059
---------------------------------------	------

STARFLO ENGINEERING

BRG (Bearing Life Calculations)	471
CHART: Bar Charts	678
CODE (Computer-Oriented Drafting Equivalent)	678
Gear	688
GEARW	497
Grid	498
HATCH — Crosshatching	694
Holes	501
Hoop	501
Pie	707
Shaft: Stress Calculations	530
TAPEIA	540
Wall	732

STAVELEY COMPUTING

AWRAP (Wire Wrapping for GD Fully Automatic Machines)	987
FINCON (Financial Control System)	1004
PAYSOLVE (Payroll)	115
Real-Aid	1049
WWRAP (Wire Wrapping for Semiautomatic Machines)	1062

STRUCTURAL MEMBERS USERS GROUP

Structural Member Analysis Programs	538
---	-----

SUNBELT COMPUTER SERVICES, INC.	
Banker's Credit Management System	617
SUNQUEST INFORMATION SYSTEMS	
Sunquest Laboratory System	790
SYMBOLIC SYSTEMS INC.	
Commercial/Residential Property Management	1196
SYNERGISTIC TECHNOLOGY INC.	
STI-ANIMATION	535
STI-MATVAM	536
VAMP (Vibration Analysis and Measurement Processor)	544
SYSTEM ANALYSIS CORP.	
Clini-CAL® Laboratory Information System	743
SYSTEM ASSOCIATES, INC.	
SMARTEYE Routing Controller	408
SYSTEM EFFECTIVENESS ASSOCIATES	
REAP™ (Reliability Effectiveness Analysis Program)	523
SYSTEM PERFORMANCE HOUSE, INC.	
DOPTER	567
DYNPRI	186
Single-Disk DOPTER	596
SPSORT (FSORT3 Emulator)	602
SPSORT (Sort-1-Plus Emulator)	602
SPSORT (SORTM/SORTG Emulator)	603
UFDOPT (UFD Optimizer)	604
SYSTEMS & PROGRAMMING INT'L, INC.	
TC (Total Communicator)	1349
SYSTEMS ASSOCIATES, INC.	
Wood Beam Check	546
SYSTEMS BY GRABER	
Spectrum	788
Sprint	789
SYSTEMS BY MICA, INC.	
MDS-4	392
SYSTEMS DATA, INC.	
SBC-11/21 Downloader	1347
SYSTEMS ELEVEN, INC.	
Attendance	432
Grade Reporting	445
Payroll	451
PPBS: Budgeting/GL/AR/AP	645
PRSN (Personnel)	454
Registration	455
Scheduling	456
SYSTEMS ENGINEERING TECHNOLOGY INC.	
Date*Book	1083
SYSTEMS FOR PROFIT INC.	
CMI PROFIT	992

	Page
SYSTEMS GUILD, INC.	
Csharp Realtime Toolkit	271
SYSTEMS SUPPORT, INC.	
COLTS (Computerized On-Line Transportation System)	1418
TANO CORP.	
TMS-4 (TANO Macro System, Version 4)	427
TEC COMPUTER SYSTEMS, INC.	
TEC Manufacturing System	1059
TECHNICA, INC.	
Decision Tree	626
GENESYS	635
Performance Manager	642
TECHSCORE	650
TECHNICAL EVALUATION AND MANAGEMENT SERVICES, INC.	
CLIN-TEAMS®	1210
CLIN-TEAMS® /Remote	743
TEAMS® -TOX	1226
TECHNICAL INFORMATION SYSTEMS, INC.	
Clientrac™	479
COGO (Coordinate Geometry)	481
CPM (Critical Path Method)	217
HEC 1: Runoff Hydrographs	500
HEC 2: Backwater Profiles	500
Lambert Geodetic Conversion	507
PRODAT (Project Day Computation)	223
REWALL (Retaining Wall Design)	525
SPIPE (Circular Pipe Analysis)	534
STRESS (Structural Engineering Solver)	537
UDAP (Urban Drainage Analysis Package)	542
WATDIS (Water Distribution System Analysis)	545
TECHNICAL SOLUTIONS, INC.	
DEEP (Data Entry and Editing Package)	1372
MathStat Library	297
TSI JobCost	225
TSI P-M (Project Management)	1203
TECHNOLOGY CONCEPTS, INC.	
ETHERWAY™	1301
TECHTRONIC DATA SYSTEMS, INC.	
OGA\$ (Oil and Gas Accounting System)	425
TECHWARE COMPUTING CO.	
CAM-TECH	990
TEKTRONIX, INC.	
TNIX Operating System — Tektronix 856x Series	1151
TELEDYNE GEOTECH	
SDP (Seismic Data Processing)	1225
TEMPLE, BARKER & SLOANE INC.	
SIBYL/RUNNER® Interactive Forecasting System	972
TEXAS PROCESSOR INC.	
PAS-11/D (Professional Accounting Series-11/Dental)	777

1698 Vendor Product Title List

	Page
PAS-11/M (Professional Accounting Series-11/Medical)	777
TEXPRINT, INC.	
E Z Chart	684
HCGS (Host Computer Graphics Software)	695
THETA BUSINESS SYSTEMS	
TBS Accounts Payable System	137
TBS Accounts Receivable System	138
TBS General Ledger System	139
TBS Order Entry System with Inventory Control, Billing, and Sales Analysis	410
TBS Payroll Accounting	140
TBS PDS (Pascal Development System)	349
TBS Time Accounting for Professionals	1176
TIMELINE, INC.	
Timeline Accounts Payable	141
Timeline Accounts Receivable	141
Timeline Fixed Assets	142
Timeline General Ledger and Financial Reporting	143
TIMESHARING CONSULTANTS OF PENNSYLVANIA, INC.	
Apartment Management System	1194
Property and Casualty Insurance System	849
TLS CO.	
LIBERTY™ Agency Management System	849
THE TOOLSMITH	
The Toolbox	352
TRANSTIME TECHNOLOGIES CORP.	
DATAMAT	805
TRIAD DATA PROCESSING	
Integrated Business Software	90
Medication/Treatment Sheet System for Nursing Homes	770
TVORNICA ARMATURA ALIPASIN MOST	
PRINCE (Production Information Center)	1037
TYCHO RESEARCH ASSOCIATES, INC.	
TYCHO/HASP	1352
UBICOM INC.	
AnaTOLL	549
AutoTELEX	1268
UMS/DIGITAL SYSTEMS, INC.	
REACT	1187
RECAP	665
UNICORP SOFTWARE, INC.	
ViewComp Electronic Spreadsheet	651
UNIFIED SOFTWARE SYSTEMS	
UNIFORTH	942
UNIFY CORP.	
UNIFY Relational Data Base Management System	355
UNIPRESS SOFTWARE, INC.	
Amsterdam Compiler Kit	259
UniplexII Word Processor	1109

UNIQ DIGITAL TECHNOLOGIES

Spider II Manufacturing Planning and Control System	1056
Uniq™ UNIX* System V	1154

UNIQUE AUTOMATION PRODUCTS

RJE (Remote Job Entry)	1340
UAP-LINK	1353

UNIQUE CONSULTING SERVICES

VantagePoint	1414
--------------------	------

UNITED DATA SYSTEMS, INC.

Resort Property Management	1253
UDS General Ledger Accounting	147
UDS IAS (Insurance Accounting System)	851
UDS PMAS (Property Management Accounting System)	1203
UDS Real Estate Sales Analysis	1204
UDS REAS (Real Estate Accounting System)	1204

UNITED STATES SOFTWARE CORP.

FPAC/DPAC Floating-Point Library	285
MTK-II Multi-Tasking Kernel	320
USX51 8051 Operating System	1156
USX86 8086 Operating System	1156
USX96 8096 Operating System	1156

UNITRONIX CORP.

Accounts Payables	21
Accounts Receivables	29
Automotive System	1418
Electrical Contracting	1182
Electrical Repair and Paging	1183
Employment Agency	1170
General Ledger	85
Office Supply/1000	1097
Order Processing	396
Payroll	1172
Vet System/2000	792

UNIVERSAL LIBRARY SYSTEMS

ULISYS	957
--------------	-----

UNIVERSITY OF ARIZONA

DAREP (Differential Analyzer Replacement — Portable), DARE/11	487
MICRODARE	1217

UNIVERSITY OF CALIFORNIA, LOS ANGELES

CHROM (Chromatography Graphics and Analysis)	1208
CHROMPAK (Chromatography Analysis Package)	1209
DATIN	1210
EXP1234 (Exponential Model Fitter)	494
MCSIM (Monte Carlo Simulation)	511
OSS (Optimal Sampling Schedule Designs)	1221
RKLIN (Linear System Simulation: Runge-Kutta)	526
SVD (Singular-Value Decomposition)	540

UNIVERSITY OF IOWA

CADA-1983 (Computer-Assisted Data Analysis Monitor)	433
---	-----

URBAN SOFTWARE CORP.

Leverage	821
----------------	-----

1700 Vendor Product Title List

Page

USERWARE INTERNATIONAL

Pioneer COMMAND Accounts Payable Module	118
Pioneer COMMAND Accounts Receivable Module	118
Pioneer COMMAND Bill of Materials Processor Module	1033
Pioneer COMMAND Fixed-Assets Module	643
Pioneer COMMAND General Ledger Module	119
Pioneer COMMAND Inventory Management Module	401
Pioneer COMMAND Master Production Scheduling Module	1033
Pioneer COMMAND Material Requirements Planning Module	1034
Pioneer COMMAND Production Control Module	1035
Pioneer COMMAND Purchase Order Processing Module	402
Pioneer COMMAND Sales Order Processing Module	403
Pioneer COMMAND System for Financial Management, Distribution, and Manufacturing	831
USER-11 Database Management System	357
User-Mail	1109

VANDATA

Vandata Z80 C Cross-Compiler	942
------------------------------------	-----

VERTEX SYSTEMS CORP.

ACCDIBS (Accountant DIBS — Turnkey)	364
ACCDIBSAP (Accountant DIBS Accounts Payable)	364
ACCDIBSAR (Accountant DIBS Accounts Receivable)	364
ACCDIBSGL (Accountant DIBS General Ledger)	365
ACCDIBSIO (Accountant DIBS Inventory and Order Entry)	365
ACCDIBSPR (Accountant DIBS Payroll)	366
ACCDIBSSA (Accountant DIBS Sales Analysis)	366

VIDEO COMMUNICATIONS, INC.

Television Operations Systems	1073
-------------------------------------	------

VIKING SOFTWARE SERVICES, INC.

VCS (Viking Control System)	208
VDE (Viking Data Entry)	841
VDM (Viking Data Manager)	842
VFM (Viking Forms Manager)	359

VIRTUAL MICROSYSTEMS

Bridge/86	1080
-----------------	------

VIRTUAL SYSTEMS, INC.

MacroVAX	902
Microbench 6800 Cross-Assembly Package	301
Microbench 68000 Cross-Assembly Package	302
Microbench 6805 Cross-Assembly Package	303
Microbench 6809 Cross-Assembly Package	304
Microbench 8021/8035/8048/8748 Cross-Assembly Package	305
Microbench 8051 Cross-Assembly Package	306
Microbench 8080/8085 Cross-Assembly Package	307
Microbench 8086/8087/8088 Cross-Assembly Package	308
Microbench C Cross-Compiler for the Intel 8086/8087/8088	309
Microbench FORTRAN-77 Cross-Compiler for the Intel 8086/8088	310
Microbench Pascal Cross-Compiler for the Intel 8086/8088	311
Microbench Simulators for the Zilog Z80, Intel 8080, and Intel 8086	312
Microbench Z80 Cross-Assembly Package	313
Microbench Z8000 Cross-Assembly Package	314

VLSYSTEMS, INC.

VANGO	544
-------------	-----

VR SYSTEMS

PLOT50 (Vector Plotting for the LA50) 711

WARREN POINT INTERNATIONAL, LTD.

80/DS (PL/M-80) (Development System) 854

86/PC (PL/M-86) Compiler 854

PDL and PDL/81 (Program Design Language) 917

WATCOM PRODUCTS INC.

WATBOL-11 Compiler 943

WATFOR-77 Compiler 944

WAYNE MEDICAL SYSTEMS

Wayne Medical System 793

WCI — CONTROLS AND DATA SYSTEMS

OMNICONROL® and OMNIPREP® 1029

WEAVER & ASSOCIATES, INC.

DACMS (Distribution and Cash Management System) 372

POMS (Professional Office Management System) 951

WECON PROCESS SYSTEMS INC.

CPCS-I (WECON Computer Process Control System) 999

WEIDNER COMMUNICATIONS CORP.

MACROCAT 1070

WCC CAT (Computer-Assisted Translation and Multilanguage WP System) 1074

WFT

M-CUBED — Multiple Microprocessor MACRO Cross-Assembler 293

WHALING CITY SOFTWARE

BACKUP 561

LA.SYS 1321

Single-, Double-, Triple-Precision ASCII to Decimal/Decimal to ASCII 251

WHITESMITHS, LTD.

C Native and Cross-Compilers 868

Co-Idris™ Operating System 1116

Idris™ Operating System 1122

Pascal Native and Cross-Compilers 915

WHY SYSTEMS

DIGICALC™ 627

DIGIPORT 1292

PRO/DIGICALC 646

WINTEK CORP.

M6800/01/05/09 Cross-Software Packages 293

WOODBURY COMPUTER ASSOCIATES

Vista Publishing and Distribution System 1073

WORLD-WIDE COMPUTER RESOURCES

Pharmacy 780

WORLDWIDE DATA SYSTEMS, INC.

Wine and Beverage Distribution System 417

X.DOT CORP.

X.Dot™ 1361

1702 Vendor Product Title List

Index

Keyword usage according to industry/generic discipline is provided.

- A-to-Z. *See* Accounting; Development tools; Financial management; Graphics; Information management; Office systems; Systems communications; Text management
- Accounting, 4-147. *See also* Agriculture; Construction; Distribution; Earth resources; Education; Facilities management; Financial management; Government; Health care; Information management; Insurance; Law; Management; Manufacturing; Media; Office systems; Personnel; Public utilities; Real estate; Sales and marketing; Service industries; Trade; Transportation
- A-to-Z, 4-6
- accounts payable, 4, 8, 9, 11-21, 30, 32, 33, 35, 40, 47, 53, 56, 57, 62, 63, 65, 68, 74, 87, 89-91, 94, 95, 97, 103, 116, 118, 120, 121, 123, 127, 135-137, 141, 144, 146, 147
- accounts receivable, 4, 8, 9, 21-29, 31, 35, 38, 39, 41, 48, 56, 59, 62, 63, 65, 68, 74, 87, 89, 90, 94-96, 98, 101, 103, 106, 116, 118, 120, 121, 123, 124, 128, 131, 133, 135, 136, 138, 141, 145-147
- application development, 51, 62, 63
- audit, 24, 65, 132, 135, 136
- banking, 134, 136, 137
- billing, 10, 13, 19, 21, 23, 27, 28, 31, 35, 48, 55, 58, 59, 68, 93, 102, 104, 106, 116, 131, 136, 140, 141
- calculation aids, 41, 61, 69
- construction, 147
- cost accounting, 7, 11, 12, 29-32, 37, 39, 44, 54, 59, 64, 94, 106, 116, 117, 147
- credit, 23, 35, 101, 121, 134, 137
- data base management, 31, 78, 142, 144-147
- data collection, 34, 78
- distribution, 51, 58, 59, 61, 95, 130, 143
- education, 39, 68, 89, 133
- employment, 49, 107, 113, 129
- financial analysis, 10, 11, 19, 28, 36, 39, 40, 44, 59, 70, 71, 78, 79, 82, 84, 87, 91, 92, 116, 121, 122, 135, 142
- financial management, 8, 14, 23, 30, 31, 45, 82, 84, 85, 90, 99, 101, 117, 141, 143, 144, 147
- financial planning, 10, 20, 29, 75, 84, 117, 121, 122
- fixed assets, 7, 29, 36, 53, 61, 66, 69-72, 124, 142
- forecasting, 65, 66, 74
- forms management, 79, 134
- general ledger, 5, 8, 10, 11, 20, 37, 41, 42, 46, 52, 54, 56, 59, 62-64, 67, 68, 75, 79-90, 92, 94, 95, 97, 99, 107, 117, 119-123, 125, 129, 136, 137, 139, 143-147
- government, 39, 133
- health care, 80
- inventory, 6, 7, 42, 43, 45, 49, 58, 61-63, 68, 76, 90, 93, 99, 100, 104, 105, 117, 123, 125, 130
- investments, 124
- list processing, 39, 98
- management, 64, 134
- manufacturing, 11, 44, 94, 130, 132
- mathematics, 132
- menu handlers, 64
- office systems, 4-6, 18, 30, 31, 56, 64, 106
- order processing, 6, 8, 45, 50, 58, 61-63, 68, 74, 76, 89, 93, 99, 104, 105, 117, 126, 136
- payroll, 8, 31, 32, 34, 44, 49, 52, 54-57, 60, 62, 63, 67, 77, 89, 94, 100, 102, 103, 107-115, 120, 129, 140, 146, 147
- personnel, 60, 100, 109, 110, 112, 113, 129, 140
- planning aids, 127
- point of sale, 21
- project management, 37, 94, 147
- property management, 11, 69, 72, 103
- purchasing, 12, 34, 45, 50, 56, 61, 68, 78, 93, 126, 130, 132, 141
- query facilities, 40, 41, 43-45, 64, 141

1704 Index

- real estate, 11
- report writer, 8, 10, 18, 34, 40-43, 45, 46, 52, 64, 70, 74, 79, 82, 85, 97, 99, 100, 125, 131, 133, 134, 137, 143
- sales analysis, 27, 28, 42, 45, 48, 51, 54, 58, 65, 76, 100, 104, 141, 146
- scheduling, 10, 52, 55, 64
- security, 97, 99
- spreadsheets, 52, 54, 56, 66, 73-75, 78, 85, 143, 147
- statistics, 132
- taxes, 27, 31, 32, 36, 49, 53, 70, 71, 107-109, 111, 112, 114, 127, 140, 142
- telecommunications, 20, 115
- warehousing, 125
- wholesale, 59, 62, 63
- Accounts payable. *See* Accounting; Arts and leisure; Distribution; Education; Financial management; Government; Health care; Insurance; Service industries; Transportation
- Accounts receivable. *See* Accounting; Agriculture; Arts and leisure; Distribution; Education; Financial management; Government; Health care; Insurance; Law; Management; Manufacturing; Media; Office systems; Public utilities; Real estate; Sales and marketing; Service industries; Trade; Transportation
- A/D, D/A. *See* Computer operations; Data conversion; Development tools; Engineering; File management; Graphics; Health care; Language processors; Manufacturing; Operating systems; Research; Systems communications
- Advertising/promotion. *See* Media; Sales and marketing
- Aeronautics/aerospace. *See* Development tools; Engineering; Manufacturing; Transportation
- Agriculture, 150-157
 - accounting, 157
 - accounts receivable, 154, 156
 - bill of materials, 153
 - billing, 151, 156
 - calculation aids, 152, 154, 155
 - cost accounting, 152
 - data collection, 150
 - decision support, 155
 - distribution, 150, 156
 - environmental, 157
 - financial analysis, 155
 - forecasting, 153
 - general ledger, 154
 - information management, 151, 157
 - inventory, 154-157
 - management, 150
 - manufacturing, 153
 - materials handling, 153
 - medical, 151, 152, 154
 - modeling/simulation, 153, 157
 - nutrition, 152, 153, 155, 157
 - order processing, 155, 156
 - process control, 155
 - production control, 150, 152, 156
 - property management, 150
 - quality control, 156
 - report writer, 150
 - sales analysis, 156
 - scheduling, 151, 153, 157
 - statistics, 152, 154
- Application development. *See* Accounting; Data conversion; Development tools; Engineering; File management; Financial management; Graphics; Information management; Language processors; Manufacturing; Operating systems; Personal computing; Text management
- Architecture. *See* Construction; Development tools; Engineering; Graphics; Management
- Artificial intelligence. *See* Development tools; Research
- Arts and leisure, 160-175. *See also* Service industries; Trade
 - accounts payable, 162
 - accounts receivable, 166
 - calculation aids, 166, 168
 - financial management, 173
 - fund raising, 162
 - games, 160-175
 - general ledger, 162
 - information management, 173
 - inventory, 173
 - list processing, 162
 - mathematics, 168
 - payroll, 166
 - point of sale, 163
 - presentation aids, 160, 162, 164
 - real time, 163
 - report writer, 166
 - scheduling, 170
 - statistics, 166, 168, 170
 - taxes, 173
- Assemblers. *See* Data conversion; Development tools; Engineering; Language processors; Operating systems; Personal computing
- Asynchronous communication. *See* File management; Graphics; Health care; Systems communications
- Audit. *See* Accounting; Computer operations; Education; Financial management; Health care
- Automotive. *See* Distribution; Engineering; Government; Manufacturing; Public utilities; Sales and marketing; Service industries; Transportation

- Banking. *See* Accounting; Financial management; Law; Personnel; Real estate; Trade
- Bar coding. *See* Data conversion; Distribution; Earth resources; Facilities management; Graphics; Information management; Library science; Manufacturing; Office systems
- Bill of materials. *See* Agriculture; Construction; Distribution; Manufacturing
- Billing. *See* Accounting; Agriculture; Computer operations; Construction; Distribution; Education; Financial management; Government; Health care; Insurance; Law; Management; Manufacturing; Media; Personnel; Public utilities; Real estate; Service industries; Trade; Transportation
- Biology. *See* Data conversion; Engineering; Health care; Research
- Broadcasting. *See* Media
- CAD/CAM. *See* Computer operations; Development tools; Engineering; Graphics; Manufacturing
- Calculation aids. *See* Accounting; Agriculture; Arts and leisure; Construction; Data conversion; Development tools; Education; Engineering; Financial management; Health care; Information management; Language processors; Law; Manufacturing; Office systems; Personal computing; Research; Sales and marketing; Systems communications
- Chemical. *See* Earth resources; Engineering; Health care; Manufacturing; Research
- CIM. *See* Manufacturing
- Civil engineering. *See* Construction; Engineering; Graphics; Management
- Compilers. *See* Data conversion; Development tools; Education; Graphics; Information management; Language processors; Operating systems; Research; Text management
- Computer-aided instruction. *See* Education; Graphics; Health care; Information management; Office systems; Text management
- Computer operations, 178–210. *See also* Development tools; Education; File management; Office systems; Operating systems; Systems communications
- A/D, D/A, 180
- audit, 183, 202
- billing, 179, 186, 194
- CAD/CAM, 186
- cost accounting, 179, 194, 196, 197, 205
- data base management, 193
- data collection, 183, 185, 205
- data conversion, 184, 200
- data dictionary, 193
- data entry, 189
- debugging, 188
- decision support, 179, 190
- development tools, 181
- device drivers/handlers, 180, 191, 204, 205, 209
- diagnostics, 179, 185, 198, 199, 202
- disk utilities, 182, 185, 187, 191, 196, 197, 199, 202, 209
- file management, 192, 196, 197, 200
- file transfer, 185, 202
- forecasting, 202
- forms management, 203
- graphics, 199
- information management, 192–195
- menu handlers, 190
- microprocessor development, 180
- modeling/simulation, 185, 201
- networking, 193
- operating systems, 179, 198, 209
- planning aids, 195
- presentation aids, 195
- printing, 194, 201
- programming tools, 183, 189–192, 203, 205, 208, 210
- project management, 186
- purchasing, 179
- quality control, 198
- report writer, 183, 200
- scheduling, 179, 186, 188
- security, 178, 184, 185, 190, 196, 200, 208
- signal processing, 204
- software utilities, 178, 181–184, 186, 188, 190, 194, 196, 198–201, 203, 205–210
- statistics, 178, 181, 198–201, 203, 205, 207, 210
- Construction, 214–225. *See also* Accounting; Engineering; Government; Management
- accounting, 215, 216, 220, 221, 224
- architecture, 218
- bill of materials, 218
- billing, 214, 216, 218
- calculation aids, 214
- civil engineering, 217, 218, 220, 223
- cost accounting, 214–216, 218–222, 225
- credit, 224
- decision support, 224
- distribution, 214
- electrical, 219
- engineering, 219
- financial analysis, 219
- financial management, 224
- financial planning, 220

- graphics, 214
 - information management, 216
 - inventory, 215, 221, 224
 - management, 216
 - manufacturing, 221
 - modeling/simulation, 214
 - order processing, 215, 223
 - payroll, 216, 220
 - production control, 214, 215
 - project management, 215-218, 221-225
 - property maintenance, 218
 - purchasing, 223
 - real estate, 214
 - report writer, 221
 - retail, 224
 - sales analysis, 219
 - scheduling, 214, 215, 217, 218, 223
 - structural engineering, 214
 - warehousing, 221
 - wholesale, 224
- Cost accounting.** *See* Accounting; Agriculture; Computer operations; Construction; Distribution; Education; Engineering; Facilities management; Financial management; Graphics; Health care; Information management; Law; Management; Manufacturing; Office systems; Personnel; Public utilities; Service industries; Transportation
- Credit.** *See* Accounting; Construction; Distribution; Financial management; Insurance; Office systems; Public utilities; Trade
- Cross-assemblers.** *See* Development tools; Language processors
- Cross-compilers.** *See* Development tools; Language processors
- Data base management.** *See* Accounting; Computer operations; Data conversion; Development tools; Education; File management; Financial management; Graphics; Health care; Information management; Insurance; Language processors; Law; Library science; Management; Manufacturing; Media; Office systems; Operating systems; Personal computing; Personnel; Public utilities; Real estate; Sales and marketing; Systems communications; Text management; Transportation
- Data collection.** *See* Accounting; Agriculture; Computer operations; Data conversion; Development tools; Distribution; Earth resources; Education; Engineering; Facilities management; File management; Government; Graphics; Health care; Information management; Language processors; Library science; Management; Manufacturing; Media; Office systems; Operating systems; Personnel; Public utilities; Research; Sales and marketing; Systems communications
- Data conversion, 228-254. *See also***
 Computer operations; Development tools; Engineering; File management; Graphics; Health care; Information management; Language processors; Manufacturing; Media; Personal computing; Systems communications; Text management
 A/D, D/A, 228, 233, 237-239, 241, 244, 249, 251
 application development, 230, 254
 assemblers, 246, 253
 bar coding, 234
 biology, 237
 calculation aids, 240, 250
 compilers, 253
 data base management, 248
 data collection, 228, 234, 236-239, 241, 249-251
 data entry, 251
 debugging, 231, 233, 238, 245
 development tools, 248
 device drivers/handlers, 243, 244, 246, 247, 249
 diagnostics, 232
 disk utilities, 250, 253
 documentation tools, 232, 253
 down-line loading, 249
 education, 234
 energy, 242
 file management, 229, 233-235
 file transfer, 229, 231, 232, 235, 241, 249, 253
 graphics, 239, 246, 250, 254
 health care, 248
 instrumentation, 236, 238, 244
 inventory, 234
 language enhancers, 245, 253
 mapping, 237, 246, 250
 mathematics, 236, 240, 242, 247, 252
 microprocessor development, 230, 244, 248
 optics, 239
 payroll, 254
 pre- and postprocessors, 246
 presentation aids, 250
 printing, 246
 process control, 251
 programming tools, 229-232, 234, 235, 242, 247, 251, 253
 real time, 236, 251, 254
 scientific, 236, 240, 242
 security, 233, 239, 254
 signal processing, 228, 233, 236, 237, 254

- software utilities, 228, 229, 232, 241, 243-250, 253
- source code control, 253
- statistics, 229, 248
- systems communications, 244
- telecommunications, 241
- text management, 235
- translators, 229, 231, 232, 241, 244, 245, 248
- word processing, 235, 241
- Data dictionary. *See* Computer operations; Development tools; File management; Information management; Language processors; Text management
- Data entry. *See* Computer operations; Data conversion; Development tools; Engineering; File management; Health care; Information management; Language processors; Office systems; Systems communications; Text management
- Debugging. *See* Computer operations; Data conversion; Development tools; Engineering; File management; Language processors; Operating systems; Systems communications
- Decision support. *See* Agriculture; Computer operations; Construction; Development tools; Earth resources; Education; Engineering; Facilities management; File management; Financial management; Government; Graphics; Information management; Law; Management; Manufacturing; Office systems; Personnel; Real estate; Research; Sales and marketing; Service industries; Transportation
- Dental. *See* Health care; Research
- Development tools, 256-362. *See also*
 - Computer operations; Data conversion; Education; Engineering; Graphics; Information management; Language processors; Operating systems; Systems communications; Text management
- A-to-Z, 256
- A/D, D/A, 269, 276, 333, 337
- aeronautics/aerospace, 286
- application development, 256, 259, 260, 274, 276, 279-281, 283, 300-311, 313, 314, 316, 319, 321, 323, 325, 327-329, 332, 335, 349, 353, 355, 357, 359, 360
- architecture, 338
- artificial intelligence, 325
- assemblers, 258, 262-264, 270, 278, 289, 292, 320, 334, 335, 346
- CAD/CAM, 291
- calculation aids, 275, 297, 298, 349, 358
- compilers, 259, 261, 262, 264, 265, 280, 284, 293, 309, 315, 328, 329, 334-336, 353, 361
- computer operations, 296
- cross-assemblers, 259, 260, 270, 278, 293, 301-308, 313, 314, 320
- cross-compilers, 259, 266, 278, 280, 293, 310, 311, 322
- data base management, 276, 280, 281, 290, 298, 300, 323, 325, 329, 339-344, 355, 357
- data collection, 269, 275, 276, 333, 340, 360
- data conversion, 275, 285, 295, 326, 349
- data dictionary, 256, 298, 300
- data entry, 261, 277, 285, 287, 340, 358, 359
- debugging, 257, 258, 263, 265, 268, 270, 273, 274, 279, 282, 284, 285, 288, 289, 292, 294-296, 312, 315-318, 321, 328, 333-336, 346, 348, 352, 353, 355, 361
- decision support, 288
- device drivers/handlers, 257, 267, 279, 289, 315, 333, 348, 351, 352
- diagnostics, 268, 274, 286, 331, 350
- disk utilities, 257, 261, 266, 270, 275, 276, 339, 345, 348
- documentation tools, 278, 280, 281, 284, 290, 321, 337, 348, 349, 351
- down-line loading, 279, 292
- engineering, 322
- file management, 259, 261, 285, 289, 324, 338, 345, 357
- file transfer, 272, 289, 334, 339, 349
- forms management, 277, 283, 287, 329, 337, 340, 353, 359, 362
- games, 275
- graphics, 271, 326, 327, 343, 344, 354, 358
- information management, 258, 277, 325, 339
- instrumentation, 266, 269
- interpreters, 268, 325, 326, 335
- language enhancers, 284, 291, 318, 334
- language processors, 258, 339
- mapping, 264, 273, 321
- mathematics, 271-273, 282, 285, 297, 298
- menu handlers, 256, 260, 272, 283, 296, 299, 300, 345, 353, 359
- microprocessor development, 258, 260, 262-266, 268, 270, 274, 278, 289, 292-294, 296, 301-308, 311-318, 320, 333-335, 339, 346, 355, 361
- modeling/simulation, 274, 286, 288, 301, 312, 333, 334
- networking, 286
- office systems, 256, 299
- pre- and postprocessors, 266, 269, 340-344, 350
- printing, 358
- process control, 271
- programming tools, 256-264, 266, 268-270, 275-279, 281, 283, 284, 287, 290-293, 295, 296, 299-310, 313, 314,

1708 Index

- 317-334, 336-340, 345-349, 351-353, 355-357, 359-362
- project management, 287
- quality control, 278, 351
- query facilities, 259, 298, 340, 344
- real time, 271, 316, 333, 334, 337, 358
- report writer, 261, 298, 337, 343
- research, 271
- scheduling, 345
- scientific, 327
- security, 287, 296, 299
- signal processing, 322, 337
- software utilities, 258, 260, 261, 268, 269, 271, 272, 274-276, 282, 283, 285, 287, 291, 293, 295, 297-299, 315, 321, 324, 329, 332, 345, 349, 351, 354, 356-360
- source code control, 267, 278, 280, 287, 329-332, 338, 345, 346, 352
- spreadsheets, 261
- statistics, 297, 327, 360
- systems communications, 261, 279, 286, 290, 328, 346
- telecommunications, 274, 290
- text management, 266, 267, 334, 338
- translators, 309-311, 319, 335
- word processing, 327
- Device drivers/handlers. *See* Computer operations; Data conversion; Development tools; Education; Engineering; File management; Graphics; Health care; Language processors; Manufacturing; Office systems; Operating systems; Research; Systems communications; Text management
- Diagnostics. *See* Computer operations; Data conversion; Development tools; Engineering; File management; Health care; Language processors; Operating systems; Personal computing; Systems communications
- Disk utilities. *See* Computer operations; Data conversion; Development tools; File management; Manufacturing; Office systems; Operating systems; Systems communications; Text management
- Distribution, 364-420. *See also* Accounting; Agriculture; Construction; Financial management; Information management; Manufacturing; Media; Sales and marketing; Trade; Transportation
 - accounting, 364-366, 369, 372, 374, 376, 382, 383, 388, 392, 395, 397, 398, 402, 403, 406, 408, 410, 411, 413, 417
 - accounts payable, 364
 - accounts receivable, 364, 368, 371, 384, 392, 414, 415, 418
 - automotive, 391, 409, 411
 - bar coding, 368, 386, 405, 407, 419, 420
 - bill of materials, 377, 382, 399, 420
 - billing, 367, 384, 392, 395, 397, 403, 410, 415, 416
 - cost accounting, 370, 383, 401
 - credit, 371, 395, 400
 - data collection, 408
 - electronic, 380
 - financial analysis, 374, 383, 400
 - forecasting, 370, 377
 - general ledger, 365
 - import/export, 381, 382
 - information management, 407, 412
 - inventory, 365, 367-372, 374-378, 380-382, 385-389, 391-393, 395, 397-399, 401, 403, 404, 406, 408-415, 417-420
 - manufacturing, 369, 373, 377, 379, 382, 388, 396, 401, 402, 406
 - materials handling, 368, 383, 386, 399, 408, 419, 420
 - modeling/simulation, 409
 - order processing, 365, 367-369, 371, 372, 374-377, 379-382, 385, 388, 390, 391, 393-400, 402-404, 406, 410, 412-418
 - payroll, 366
 - petroleum, 368, 384, 392, 409, 415
 - planning aids, 370, 409
 - point of sale, 404, 406, 411, 416
 - production control, 405, 408
 - purchasing, 367-369, 371, 372, 375, 378, 380, 388, 389, 391, 398, 402, 406, 410, 412, 414
 - retail, 375, 387, 394, 412
 - robotics, 399, 419
 - sales analysis, 366, 369, 371, 375, 376, 381, 394, 395, 403, 407, 408, 410
 - sales and marketing, 388, 392, 404
 - scheduling, 384
 - shop floor control, 383, 407
 - statistics, 407
 - textiles/clothing, 369
 - transportation, 382, 383
 - warehousing, 368, 369, 375, 376, 381, 383, 385-387, 389-391, 393, 394, 397, 399, 401, 408, 409, 412, 413, 418, 419
 - wholesale, 364-366, 371-376, 379, 380, 389-391, 393, 397, 412, 415-418
- Documentation tools. *See* Data conversion; Development tools; Engineering; File management; Graphics; Language processors; Media; Office systems; Operating systems; Text management
- Down-line loading. *See* Data conversion; Development tools; Graphics; Personal computing; Systems communications; Text management
- Earth resources, 422-427. *See also* Graphics
 - accounting, 425

- bar coding, 424
- chemical, 426
- data collection, 425
- decision support, 422
- energy, 427
- financial management, 425
- geoscience, 423, 424
- graphics, 423
- information management, 424
- inventory, 422, 424-426
- mapping, 423
- materials handling, 426
- petroleum, 424-427
- pipeline simulation, 422
- process control, 425-427
- production control, 422
- public utilities, 427
- report writer, 426
- scheduling, 422
- warehousing, 422
- Education, 430-465. *See also* Accounting;
 - Data conversion; Engineering;
 - Financial management; Graphics;
 - Language processors; Management;
 - Media; Personnel; Research
- accounting, 441, 448, 457, 458
- accounts payable, 436, 458
- accounts receivable, 431, 437
- audit, 439
- billing, 431, 437, 441
- calculation aids, 430, 434, 445, 446, 453
- compilers, 465
- computer-aided instruction, 433-435, 440, 442-444, 447, 449, 453-455, 459, 462, 464, 465
- computer operations, 464
- cost accounting, 459
- data base management, 431, 433, 436-440, 445, 448, 450, 451, 453, 463
- data collection, 444-446
- decision support, 444, 446, 461
- development tools, 465
- device drivers/handlers, 454
- employment, 438, 444
- engineering, 443
- financial analysis, 438, 441
- financial management, 439, 440, 457, 458
- financial planning, 444, 457
- forecasting, 434
- forms management, 445, 456
- fund raising, 437
- general ledger, 436, 458
- government, 459
- graphics, 433, 443, 449
- information management, 436, 438-440, 447, 450, 455
- inventory, 457
- library science, 448
- list processing, 437, 465
- management, 440
- mathematics, 430, 441, 455, 459
- menu handlers, 433
- modeling/simulation, 434, 443
- numerical analysis, 430
- operating systems, 454, 465
- payroll, 439, 451, 459
- personnel, 438, 451, 454, 456, 459
- planning aids, 434
- presentation aids, 444
- programming tools, 435, 439, 449
- query facilities, 433, 439, 448, 454
- recruiting, 430, 436, 438
- report writer, 445, 460, 462
- scheduling, 430-432, 438, 447, 451, 456, 460, 463, 464
- software utilities, 441, 446
- statistics, 430, 433, 435, 441, 446, 456, 460, 463, 465
- taxes, 439, 451
- Electrical. *See* Construction; Engineering; Facilities management; Graphics; Manufacturing; Public utilities; Research
- Electronic. *See* Distribution; Engineering; Graphics
- Electronic mail. *See* Health care; Management; Office systems; Operating systems; Systems communications
- Employment. *See* Accounting; Education; Health care; Management; Personnel
- Energy. *See* Data conversion; Earth resources; Facilities management; Graphics; Manufacturing
- Engineering, 468-546. *See also*
 - Construction; Development tools;
 - Education; Facilities management;
 - Graphics; Language processors;
 - Management; Manufacturing;
 - Research
- A/D, D/A, 469, 502
- aeronautics/aerospace, 489, 507, 536, 538, 541, 544
- application development, 506
- architecture, 497, 498, 526, 546
- assemblers, 543
- automotive, 475, 479, 486
- biology, 494, 511, 526
- CAD/CAM, 471, 474, 476, 478, 484, 486, 489, 491, 496-498, 501, 503, 504, 508, 512, 516, 526, 530, 538, 540, 544
- calculation aids, 471, 472, 475, 484-486, 501, 509, 514, 519, 524, 534, 537, 541, 543
- chemical, 468, 469, 489, 494, 507
- civil engineering, 468-474, 477, 478, 481, 483, 485, 490, 493, 494, 497-501, 507, 509, 510, 512, 514-519, 522, 525, 529, 531-534, 536, 537, 539, 542-546
- construction, 526
- cost accounting, 517, 519
- data collection, 468, 469, 482, 528, 529, 541

1710 Index

- data conversion, 469, 507, 508
 - data entry, 523
 - debugging, 530
 - decision support, 535
 - development tools, 469, 476, 497
 - device drivers/handlers, 476, 480, 496, 541
 - diagnostics, 482, 504
 - documentation tools, 524
 - education, 469, 519, 520
 - electrical, 468, 479, 487, 490-492, 503, 507, 521, 522
 - electronic, 478, 482, 486, 503, 508, 512
 - environmental, 523
 - financial management, 519
 - flow analysis, 472, 477, 499, 500, 514, 521, 522, 531, 532, 534, 542, 545
 - forecasting, 523
 - geoscience, 477, 507, 522, 539
 - government, 546
 - graphics, 474-476, 478, 479, 484, 486, 489, 492, 493, 496-498, 501-503, 508, 510, 511, 526, 535, 539, 544
 - information management, 479
 - instrumentation, 468, 482, 493, 526-529
 - interpreters, 513
 - language enhancers, 476
 - management, 479
 - manufacturing, 471, 497, 501, 503, 530, 540
 - mapping, 478, 480, 481, 484, 485, 493, 498, 508, 539, 544
 - materials handling, 546
 - mathematics, 476, 481, 484, 494, 495, 506, 511, 512, 514, 520, 526, 530, 534-536, 540, 541, 543, 545
 - mechanical engineering, 471, 474, 475, 487, 497, 501, 529, 530, 536, 538, 540, 544
 - medical, 505
 - metals, 497, 510
 - modeling/simulation, 469, 474, 486-489, 491, 492, 494, 495, 503-505, 507, 508, 511-514, 521, 522, 524, 526, 529, 530, 533, 540, 541
 - nuclear, 492, 526-529
 - optics, 516
 - petroleum, 494
 - pharmaceutical, 494
 - pre- and postprocessors, 480, 485, 511, 535, 536
 - presentation aids, 496
 - process control, 468, 494, 495, 524
 - programming tools, 506, 545
 - project management, 499, 517-519
 - quality control, 523, 528
 - real time, 507, 541
 - research, 469, 488, 511-513, 526, 535, 540
 - sales analysis, 479
 - scheduling, 507, 519
 - scientific, 476, 482, 487, 488, 493, 502, 505, 516, 519, 523, 526-529, 533, 535, 536
 - security, 523
 - signal processing, 478, 488, 502, 505, 523, 533, 544
 - software utilities, 518, 533, 543
 - source code control, 513
 - statistics, 484, 494, 506, 508, 511, 514, 519, 520, 523, 535, 536, 540, 541, 545
 - structural engineering, 468-475, 477, 480, 483-486, 490, 493, 494, 497, 499, 501, 509, 510, 512, 514-519, 522, 525, 531-534, 536-538, 542-544, 546
 - text management, 503
- Environmental. *See* Agriculture; Engineering; Facilities management; Manufacturing
- Facilities management, 548-556. *See also* Graphics; Language processors; Manufacturing; Public utilities
- accounting, 549, 553
 - bar coding, 551
 - cost accounting, 552
 - data collection, 550
 - decision support, 555
 - electrical, 550, 551, 553, 556
 - energy, 550, 551, 553, 556
 - engineering, 549
 - environmental, 549, 550
 - fixed assets, 551
 - instrumentation, 555
 - inventory, 551, 553
 - manufacturing, 549
 - materials handling, 550
 - planning aids, 548
 - process control, 549, 550
 - project management, 551
 - property maintenance, 548, 550-555
 - property management, 551, 553
 - purchasing, 553
 - scheduling, 548, 552-554, 556
 - security, 556
 - telecommunications, 549
- File management, 558-606. *See also* Computer operations; Data conversion; Development tools; Financial management; Information management; Language processors; Office systems; Operating systems; Personal computing; Personnel; Systems communications; Text management
- A/D, D/A, 558, 579
 - application development, 577, 586, 597
 - asynchronous communication, 576
 - computer operations, 573, 589
 - data base management, 565, 577, 578, 588, 593, 595, 599
 - data collection, 570, 579, 598

- data conversion, 558, 564, 566, 569, 571, 573, 574, 581, 585, 588, 590, 594, 604, 605
 - data dictionary, 599
 - data entry, 586
 - debugging, 581
 - decision support, 567
 - device drivers/handlers, 558, 560, 562, 571, 579, 580, 584, 592, 598
 - diagnostics, 562, 568, 589, 591, 604
 - disk utilities, 558-569, 572, 574, 576, 577, 580, 582, 584-592, 594-596, 598-600, 604-606
 - documentation tools, 598, 605
 - file transfer, 558, 560-569, 571-582, 585-587, 591, 592, 595, 597, 605
 - information management, 559, 578, 583
 - instrumentation, 585
 - language enhancers, 594
 - mapping, 563
 - menu handlers, 565, 573, 582
 - microprocessor development, 564, 572
 - modeling/simulation, 585
 - networking, 558, 579, 597
 - operating systems, 595, 606
 - printing, 564, 568, 571, 573, 592, 602
 - process control, 585
 - programming tools, 559, 563, 576, 582, 588, 592, 594, 596, 597, 605, 606
 - project management, 593
 - query facilities, 565, 581, 599
 - real time, 579, 591
 - report writer, 565, 577
 - robotics, 564
 - security, 590, 594
 - signal processing, 580
 - software utilities, 559-561, 564, 565, 569-571, 574, 576, 577, 580, 581, 583-587, 592, 596-603, 605
 - source code control, 571, 572, 598, 605
 - systems communications, 579, 587
 - text management, 568, 573, 603
 - translators, 564, 604
- File transfer.** *See* Computer operations; Data conversion; Development tools; File management; Graphics; Language processors; Manufacturing; Office systems; Operating systems; Personal computing; Systems communications; Text management
- Financial analysis.** *See* Accounting; Agriculture; Construction; Distribution; Education; Financial management; Graphics; Health care; Law; Management; Manufacturing; Office systems; Real estate; Sales and marketing; Trade; Transportation
- Financial management, 610-651.** *See also* Accounting; Arts and leisure; Construction; Earth resources; Education; Engineering; Government; Health care; Information management; Insurance; Law; Office systems; Operating systems; Real estate; Service industries; Trade
- A-to-Z, 611**
- accounting, 614, 615, 617, 619, 627, 630, 634, 635, 643, 645-647
 - accounts payable, 636
 - accounts receivable, 636, 638
 - application development, 646
 - audit, 614
 - banking, 612, 614, 617, 619, 620, 622-624, 626, 632-635, 638, 639, 641, 642, 644, 646, 648, 650
 - billing, 616, 638
 - calculation aids, 620, 622, 635, 638, 641, 648
 - cost accounting, 613, 616, 631, 647
 - credit, 617, 623, 626, 632, 635, 642, 650
 - data base management, 634, 646
 - decision support, 618, 621, 625, 626, 629, 630, 633, 638, 639, 642, 645, 648, 651
 - distribution, 647
 - education, 617, 618, 644, 645
 - file management, 620
 - financial analysis, 610, 612, 613, 615, 617, 619, 621, 623-625, 627, 629-631, 635, 637-639, 644, 646, 648, 650, 651
 - financial planning, 610, 613, 621, 629-631, 633, 638-640, 642, 644-646, 648-650
 - fixed assets, 627, 637, 643
 - forecasting, 612, 613, 621, 625, 629, 630, 633, 638, 645, 650
 - general ledger, 614, 615, 617, 619, 628, 632, 634, 635
 - government, 644, 645
 - graphics, 634, 640
 - import/export, 622
 - information management, 614, 628
 - insurance, 643
 - inventory, 615, 628, 636, 644
 - investments, 615, 618, 624, 641, 642, 644
 - management, 634
 - materials handling, 621
 - modeling/simulation, 612, 618, 625, 629-631, 635, 649, 651
 - office systems, 611
 - order processing, 615, 636, 644
 - payroll, 614, 619
 - personnel, 643
 - planning aids, 625
 - project management, 616, 631
 - purchasing, 628
 - real estate, 620
 - report writer, 610, 612, 620, 628, 635, 639
 - retail, 626, 635, 642, 650
 - sales and marketing, 639, 647
 - scheduling, 616

1712 Index

- spreadsheets, 611, 612, 621, 625, 627, 630, 633, 638-640, 645, 646, 648, 649, 651
- statistics, 612
- taxes, 610, 628, 637, 642, 650
- telecommunications, 627, 633, 634
- trade, 622
- transportation, 628
- Financial planning. *See* Accounting; Construction; Education; Financial management; Government; Insurance; Management; Manufacturing; Office systems; Personal computing; Personnel
- Fixed assets. *See* Accounting; Facilities management; Financial management; Health care; Real estate
- Flow analysis. *See* Engineering
- Forecasting. *See* Accounting; Agriculture; Computer operations; Distribution; Education; Engineering; Financial management; Health care; Information management; Management; Manufacturing; Sales and marketing
- Foreign language translation. *See* Media
- Forms management. *See* Accounting; Computer operations; Development tools; Education; Graphics; Information management; Office systems; Personal computing; Sales and marketing; Text management; Transportation
- Fund raising. *See* Arts and leisure; Education; Government; Information management; Office systems
- Games. *See* Arts and leisure; Development tools; Language processors; Text management
- General ledger. *See* Accounting; Agriculture; Arts and leisure; Distribution; Education; Financial management; Government; Health care; Insurance; Law; Manufacturing; Office systems; Public utilities; Real estate; Transportation
- Geoscience. *See* Earth resources; Engineering; Research
- Government, 654-669. *See also* Accounting; Education; Engineering; Financial management; Law; Real estate
 - accounting, 658-660, 662, 664, 665
 - accounts payable, 660, 663
 - accounts receivable, 661, 663
 - automotive, 667
 - billing, 665
 - construction, 655
 - data collection, 655, 667
 - decision support, 664
 - financial management, 658
 - financial planning, 654
 - fund raising, 654
 - general ledger, 662, 663
 - information management, 655-657, 659, 660, 665-669
 - inventory, 658
 - law, 657, 666, 667, 669
 - library science, 654
 - list processing, 654, 667, 668
 - payroll, 657-659, 662-664
 - personnel, 657, 659
 - property management, 655, 666
 - public utilities, 665
 - purchasing, 664
 - real estate, 664, 666
 - sales analysis, 664
 - taxes, 658-660, 664, 666
 - word processing, 658
- Graphics, 672-732. *See also* Computer operations; Construction; Data conversion; Development tools; Earth resources; Education; Engineering; Financial management; Health care; Information management; Language processors; Management; Manufacturing; Office systems; Operating systems; Personal computing; Research; Systems communications; Text management
 - A-to-Z, 672
 - A/D, D/A, 708
 - application development, 672
 - architecture, 682, 683, 691, 705, 707, 717, 727, 732
 - asynchronous communication, 722
 - bar coding, 674
 - CAD/CAM, 675-678, 683, 684, 688, 691-694, 705, 707, 719, 724, 727, 728, 732
 - civil engineering, 682, 705, 727
 - compilers, 732
 - computer-aided instruction, 689, 718
 - cost accounting, 719
 - data base management, 684, 701, 728, 729
 - data collection, 680, 703, 704
 - data conversion, 675, 676, 679, 694, 714, 715, 721, 728, 730
 - decision support, 686, 699, 729
 - development tools, 681, 691, 695
 - device drivers/handlers, 675, 685, 687, 689, 690, 692, 697, 698, 703-705, 707, 709, 710, 713, 716, 718, 729, 730
 - documentation tools, 673, 680
 - down-line loading, 707
 - earth resources, 700
 - education, 689
 - electrical, 679, 691
 - electronic, 724
 - energy, 679

- engineering, 675, 676, 678, 688, 689, 694, 695, 700, 711, 724, 727, 732
 - facilities management, 679
 - file transfer, 687, 718, 723
 - financial analysis, 673, 674, 689
 - forms management, 673, 674
 - information management, 682, 686, 717
 - instrumentation, 705
 - language enhancers, 732
 - manufacturing, 678, 688
 - mapping, 672-674, 678-681, 683, 685, 687, 689, 691, 694-696, 699-701, 704, 705, 707-711, 713-716, 719, 723-725, 728, 731, 732
 - mathematics, 710, 713, 730
 - mechanical engineering, 688, 691, 705
 - menu handlers, 684, 716
 - modeling/simulation, 688, 711, 729
 - numerical analysis, 694
 - office systems, 672
 - personal computing, 694
 - pre- and postprocessors, 697, 714, 715
 - presentation aids, 672-674, 678-681, 683-686, 694, 697, 701, 702, 707, 712, 717, 720, 721, 723-726, 728, 729, 731
 - printing, 690, 693, 695, 699, 702, 713-715, 719-721, 729, 731
 - process control, 692
 - production control, 698
 - programming tools, 672, 681, 687, 688, 691, 692, 701
 - project management, 682
 - query facilities, 684, 685
 - real time, 687, 688, 697, 718, 722
 - scientific, 689, 692, 696, 700, 711, 725, 726
 - signal processing, 680
 - software utilities, 677, 681, 686, 687, 693, 695, 697, 713, 716, 718
 - statistics, 680, 689
 - systems communications, 690, 706
 - text management, 681, 684, 689, 695, 712, 717, 729
- Health care, 734-793. *See also***
- Accounting; Data conversion;
 - Insurance; Operating systems;
 - Research; Service industries
- accounting, 735, 737, 738, 746, 750, 751, 755, 757, 758, 767, 772, 776, 777, 781-783, 788, 789, 791, 792
 - accounts payable, 735, 765, 779
 - accounts receivable, 734, 740, 741, 746, 750, 752, 754, 760, 766-768, 770, 771, 773, 774, 776, 778-780, 785, 787
 - A/D, D/A, 753
 - asynchronous communication, 761
 - audit, 766
 - billing, 734-737, 744, 746, 750-752, 754, 756, 757, 762-764, 767, 768, 770-773, 776, 778-783, 785-787, 790-792
 - biology, 736, 754, 759, 763, 790
 - calculation aids, 742, 759
 - chemical, 745, 752, 784
 - computer-aided instruction, 753
 - cost accounting, 750, 754
 - data base management, 736, 737, 743, 744, 747, 753, 754, 763, 770, 781, 787, 791
 - data collection, 740, 743, 757, 759, 761, 763, 774, 776, 784, 788
 - data conversion, 768
 - data entry, 747
 - dental, 741, 749, 750, 768, 770, 777, 782
 - device drivers/handlers, 793
 - diagnostics, 749
 - electronic mail, 755
 - employment, 738, 778, 790
 - financial analysis, 742, 754, 756, 780
 - financial management, 745, 746, 751, 765, 792
 - fixed assets, 765
 - forecasting, 781
 - general ledger, 735, 746, 754, 765, 776
 - graphics, 737, 749, 788, 793
 - information management, 734, 741, 745, 746, 755, 757, 762, 763, 765, 769, 772, 774, 782, 786, 787, 792, 793
 - instrumentation, 763, 774, 790
 - insurance, 737, 762, 771, 772, 776, 777, 782, 785, 791
 - inventory, 737, 738, 740, 748, 754, 760, 764, 772, 775, 783, 784, 787-789, 792
 - library science, 739
 - list processing, 783, 791
 - management, 758
 - mapping, 753
 - materials handling, 748
 - medical, 734, 737, 738, 740-749, 751-755, 757-759, 761-771, 773-780, 782-788, 790-793
 - mental health, 745
 - nuclear, 737, 784, 793
 - nutrition, 751
 - office systems, 793
 - optics, 788
 - order processing, 758, 759, 761, 763, 772, 788, 789
 - payroll, 735, 756, 766, 776, 778, 779
 - personnel, 738, 766, 790
 - pharmaceutical, 738, 740, 747, 749, 752, 756, 760, 770, 772, 775, 780, 781, 783, 787
 - planning aids, 751
 - printing, 788
 - production control, 764
 - property management, 764
 - purchasing, 748, 754
 - quality control, 758
 - query facilities, 764
 - report writer, 735, 738, 745, 747, 751, 753, 767, 772, 779, 792
 - research, 739

1714 Index

- retail, 760
 - sales analysis, 768
 - scheduling, 734, 751, 755-757, 767, 770, 781, 790-793
 - scientific, 743
 - security, 784
 - signal processing, 753
 - software utilities, 744
 - spreadsheets, 745, 772, 792
 - statistics, 735-737, 742, 744, 751, 752, 754, 756, 764, 772, 774, 776, 778, 781, 785
 - word processing, 744, 754, 770, 792
- Import/export. *See* Distribution; Financial management; Trade
- Information management, 796-843. *See also* Agriculture; Arts and leisure; Computer operations; Construction; Development tools; Distribution; Earth resources; Education; Engineering; File management; Financial management; Government; Graphics; Health care; Insurance; Law; Library science; Management; Manufacturing; Media; Office systems; Operating systems; Personal computing; Personnel; Public utilities; Real estate; Sales and marketing; Service industries; Systems communications; Trade; Transportation
- A-to-Z, 796
- accounting, 815, 838
 - application development, 804, 805, 812, 813, 817, 825, 835, 837, 838
 - bar coding, 800
 - calculation aids, 796, 807, 831, 832, 834
 - compilers, 807
 - computer-aided instruction, 808
 - cost accounting, 818
 - data base management, 796-807, 809, 811, 814-817, 819-823, 825-829, 831-838, 841-843
 - data collection, 798, 802, 826, 839, 840
 - data conversion, 836
 - data dictionary, 799, 802, 819, 822, 823, 833, 835-838
 - data entry, 816, 821, 824, 836, 841, 842
 - decision support, 805, 821, 830, 840
 - development tools, 796, 804, 810
 - distribution, 831
 - file management, 805, 807, 814, 821, 837, 841, 842
 - financial management, 831
 - forecasting, 830
 - forms management, 801, 812-814, 816, 824, 825, 828, 835, 838
 - fund raising, 797, 808, 814
 - graphics, 811, 827, 836
 - inventory, 800, 815, 818, 820
 - language enhancers, 807
 - language processors, 800, 816
 - law, 817
 - library science, 801, 817
 - list processing, 797, 808, 814, 829, 834, 841
 - management, 815, 821
 - manufacturing, 831
 - mapping, 832
 - media, 811
 - menu handlers, 801, 812-814, 821, 824
 - modeling/simulation, 808, 818
 - office systems, 796, 801
 - operating systems, 800
 - order processing, 815, 842
 - payroll, 818
 - planning aids, 810
 - presentation aids, 808, 841
 - production control, 800
 - programming tools, 799, 816, 825, 826, 828, 841, 842
 - project management, 810, 818
 - publishing, 811
 - purchasing, 815
 - quality control, 839
 - query facilities, 800-803, 805-807, 812, 813, 815, 816, 820, 822-827, 833, 837, 838, 842, 843
 - recruiting, 797
 - report writer, 796, 797, 799, 801, 803-806, 812, 814, 818, 822, 823, 825, 826, 828, 833, 835, 836
 - research, 840
 - sales analysis, 830
 - scientific, 839
 - software utilities, 798, 807, 833
 - source code control, 804
 - spreadsheets, 831, 832
 - statistics, 830, 839, 840
 - systems communications, 826
 - telecommunications, 812, 833
 - text management, 801, 803-806, 821, 826, 827, 835
 - warehousing, 800, 820
 - word processing, 797, 814
- Instrumentation. *See* Data conversion; Development tools; Engineering; Facilities management; File management; Graphics; Health care; Manufacturing; Operating systems; Research
- Insurance, 846-851. *See also* Financial management; Health care; Law
- accounting, 847-849, 851
 - accounts payable, 848, 849
 - accounts receivable, 848, 849
 - billing, 846, 847
 - credit, 850
 - data base management, 848, 849
 - financial management, 849
 - financial planning, 846
 - general ledger, 848, 849, 851

- health care, 850
- information management, 846, 847, 849-851
- list processing, 847
- medical, 846
- office systems, 847
- property management, 849
- report writer, 850
- sales analysis, 848
- sales and marketing, 847, 849
- scheduling, 848
- statistics, 847, 850
- Interpreters. *See* Development tools; Engineering; Language processors; Operating systems; Research
- Inventory. *See* Accounting; Agriculture; Arts and leisure; Construction; Data conversion; Distribution; Earth resources; Education; Facilities management; Financial management; Government; Health care; Information management; Library science; Manufacturing; Media; Office systems; Public utilities; Real estate; Sales and marketing; Service industries; Trade; Transportation
- Investments. *See* Accounting; Financial management; Real estate
- Language enhancers. *See* Data conversion; Development tools; Engineering; File management; Graphics; Information management; Language processors; Operating systems
- Language processors, 854-944. *See also* Development tools; Information management; Operating systems
 - A/D, D/A, 934
 - application development, 862, 863, 881, 906, 907, 913, 920-925, 928
 - assemblers, 854, 865, 869, 890, 900-902, 914, 918, 928, 935, 941, 942
 - calculation aids, 856, 882, 932
 - compilers, 854-856, 859, 861-875, 880, 883-891, 893-895, 903, 904, 906-911, 914-918, 921-928, 930, 932, 933, 935, 938, 939, 941-944
 - cross-assemblers, 854, 895-899, 901, 912, 914, 937
 - cross-compilers, 854, 865, 868-870, 875, 876, 904, 914-916, 923, 935, 939
 - data base management, 938
 - data collection, 934
 - data conversion, 858, 859, 877, 878, 880, 928, 930
 - data dictionary, 859, 929, 939
 - data entry, 877, 938
 - debugging, 864, 868, 872, 874, 878, 883, 900, 908, 909, 914, 915, 923-925, 929, 930, 932, 935, 936, 938, 942, 943
 - development tools, 865, 874, 881, 893, 895-899, 901, 903, 905, 920, 927, 937, 943, 944
 - device drivers/handlers, 942
 - diagnostics, 877, 884, 885, 902, 907, 909, 925
 - documentation tools, 883, 918
 - education, 943, 944
 - engineering, 933
 - facilities management, 875
 - file management, 859, 878, 893, 919, 931
 - file transfer, 943
 - games, 930
 - graphics, 877, 890, 910
 - interpreters, 857, 858, 860, 862, 880, 890, 894, 895, 900, 904, 913, 918, 930, 932, 933, 936, 938, 943
 - language enhancers, 854, 856, 860-864, 871-873, 878-880, 882-892, 894, 900-902, 904, 906-916, 919, 921-923, 925, 926, 928, 929, 931-934, 936, 937, 939, 941, 944
 - mathematics, 856-858, 877, 913
 - menu handlers, 927
 - microprocessor development, 854, 867, 869, 870, 875, 876, 895-899, 901, 904-913, 941, 942
 - modeling/simulation, 857, 879, 912
 - networking, 859, 938
 - pre- and postprocessors, 864, 880, 890, 891, 894, 929, 939, 940
 - presentation aids, 877, 886
 - process control, 874
 - programming tools, 856, 857, 860-868, 870, 871, 873, 874, 877, 880-883, 891-893, 895-903, 905-907, 910-915, 917-927, 930-932, 935-939, 942-944
 - real time, 874, 880
 - scientific, 882, 910, 933
 - software utilities, 864-868, 872, 903, 911, 913, 931, 934, 937-939
 - source code control, 855, 858, 865, 881, 882, 915, 935
 - systems communications, 917
 - text management, 892, 918
 - translators, 858, 861, 864, 877, 879, 881, 882, 889, 893, 902, 911
- Law, 946-952. *See also* Government; Information management
 - accounting, 947-950
 - accounts receivable, 949-951
 - banking, 946
 - billing, 947-951
 - calculation aids, 951
 - cost accounting, 948, 949
 - data base management, 952
 - decision support, 946
 - financial analysis, 949, 951
 - financial management, 946-948
 - general ledger, 947
 - government, 952
 - information management, 946, 948, 952
 - insurance, 951
 - management, 947, 948, 950

1716 Index

- query facilities, 946
- real estate, 946
- report writer, 949, 951
- scheduling, 946, 949, 951
- word processing, 949
- Library science, 954-957. *See also*
 - Education; Government; Health care;
 - Information management
- bar coding, 957
- data base management, 954-957
- data collection, 954
- information management, 954, 955
- inventory, 956, 957
- media, 954
- purchasing, 955
- research, 955
- statistics, 954, 956, 957
- text management, 954, 955
- List processing. *See* Accounting; Arts and leisure; Education; Government; Health care; Information management; Insurance; Management; Media; Office systems; Personnel; Real estate; Sales and marketing; Systems communications; Text management
- Management, 960-975. *See also*
 - Accounting; Agriculture;
 - Construction; Education;
 - Engineering; Financial management;
 - Health care; Information management;
 - Law; Manufacturing;
 - Office systems; Real estate; Service industries
- accounting, 961, 971
- accounts receivable, 970, 973
- architecture, 960, 968
- billing, 965, 970, 973, 974
- civil engineering, 960, 968
- construction, 968, 975
- cost accounting, 962, 965, 969, 973, 974
- data base management, 967, 968
- data collection, 962, 963
- decision support, 968, 971, 972
- education, 971
- electronic mail, 963
- employment, 964, 965
- engineering, 970
- financial analysis, 971
- financial planning, 962, 972
- forecasting, 972
- graphics, 960, 974
- information management, 961
- list processing, 967
- metals, 962
- modeling/simulation, 964, 965, 971
- networking, 968
- order processing, 962
- payroll, 964
- personnel, 962, 965
- planning aids, 964
- project management, 960, 962, 963, 965, 966, 968-970, 974, 975
- query facilities, 963
- recruiting, 967
- report writer, 966, 967, 974
- scheduling, 960, 963, 966, 969, 970, 973-975
- spreadsheets, 971
- statistics, 964, 972
- Manufacturing, 978-1062. *See also*
 - Accounting; Agriculture;
 - Construction; Distribution;
 - Engineering; Facilities management;
 - Graphics; Information management;
 - Research; Sales and marketing
- accounting, 984, 986, 992, 1001, 1004, 1012, 1014, 1041
- accounts receivable, 1018
- A/D, D/A, 981, 1017, 1030
- aeronautics/aerospace, 1021
- application development, 987
- automotive, 979, 986
- bar coding, 1019, 1023
- bill of materials, 978, 983, 988, 989, 995, 996, 1008, 1030, 1031, 1033, 1037, 1059
- billing, 998, 1018
- CAD/CAM, 984, 987, 990, 1000, 1003, 1018, 1025-1029, 1049, 1062
- calculation aids, 991
- chemical, 982, 985, 991, 999, 1046
- CIM, 1005, 1031, 1050, 1061
- cost accounting, 991, 996, 997, 1001, 1015, 1016, 1029, 1031, 1039, 1048, 1054, 1056, 1058
- data base management, 978, 1042, 1044, 1045, 1047
- data collection, 979, 981, 982, 985, 986, 1002, 1017, 1027, 1029, 1038, 1049, 1052, 1054
- data conversion, 979
- decision support, 1005, 1016, 1041, 1043, 1047
- device drivers/handlers, 981, 1017
- disk utilities, 1000
- distribution, 992, 998, 1009, 1010, 1012, 1014, 1037
- electrical, 986, 987, 1062
- energy, 981, 1020, 1022, 1024, 1052
- engineering, 990, 1033, 1035
- environmental, 1042
- facilities management, 981
- file transfer, 986
- financial analysis, 1041
- financial planning, 1020, 1048
- forecasting, 1005, 1031
- general ledger, 1012
- graphics, 980, 1003, 1027, 1053
- information management, 978, 981, 1012, 1019, 1032
- instrumentation, 1030, 1035, 1043

- inventory, 978, 979, 983, 985, 995, 996, 1001, 1004, 1008-1011, 1013-1015, 1019, 1020, 1022, 1023, 1029-1031, 1033, 1034, 1037, 1039, 1040, 1043, 1055, 1059, 1060
- management, 1005, 1024
- materials handling, 986, 989, 997, 1000, 1002, 1010, 1013, 1014, 1022-1024, 1030, 1034, 1043, 1044, 1049, 1059
- mathematics, 1020, 1022
- mechanical engineering, 1017, 1018
- menu handlers, 1000, 1003
- metals, 985, 986, 1021, 1022, 1059
- modeling/simulation, 1016, 1045, 1047
- MRP, 992, 996, 1001, 1004, 1008, 1011, 1012, 1020, 1021, 1024, 1032, 1034
- networking, 993, 1017, 1026
- numerical control, 984, 990, 991, 1000, 1005, 1018, 1025-1029, 1031, 1060, 1061
- order processing, 984, 985, 998, 1004, 1006, 1012, 1018, 1031, 1040, 1051, 1052
- petroleum, 999, 1020, 1022, 1048
- pharmaceutical, 980, 991, 1016, 1046
- planning aids, 993-995, 1004, 1008, 1011, 1012, 1032, 1039, 1053, 1056
- pre- and postprocessors, 1005, 1025, 1028
- process control, 980-982, 985, 986, 999, 1002, 1006, 1007, 1021, 1024, 1030, 1035, 1038, 1042, 1044-1046, 1048-1050, 1052, 1053, 1057
- production control, 978, 980, 984, 987, 990, 993-998, 1001, 1007, 1015, 1016, 1018, 1019, 1021, 1024, 1025, 1033, 1035, 1037, 1039, 1045, 1049-1052, 1054-1057, 1059
- programming tools, 983, 990, 1025
- project management, 998, 1007, 1031, 1035, 1039, 1060
- property maintenance, 1036, 1043
- purchasing, 997, 1001, 1006, 1008, 1021, 1022, 1037, 1040, 1056, 1059
- quality control, 978, 981, 1006, 1017, 1021, 1041-1047, 1050
- real time, 979, 980, 982, 1004, 1035, 1042-1049, 1053, 1054
- report writer, 989, 1000, 1024
- robotics, 981, 1010
- sales analysis, 1051
- sales and marketing, 1048
- scheduling, 983, 989, 1001, 1008, 1024, 1035, 1036, 1039, 1044, 1052-1055, 1059, 1060
- scientific, 1020, 1022
- security, 981, 1000
- shop floor control, 981, 983, 987, 993, 997, 998, 1000, 1007, 1008, 1010-1012, 1016, 1017, 1020, 1026, 1028, 1029, 1039, 1049, 1050, 1052-1056, 1058, 1060, 1061
- signal processing, 1030
- software utilities, 993
- statistics, 1041, 1042, 1044-1047, 1050
- systems communications, 993
- telecommunications, 1052
- textiles/clothing, 984, 985, 1002
- translators, 983
- warehousing, 979, 998, 1010, 1014, 1036
- Mapping. *See* Data conversion; Development tools; Earth resources; Engineering; File management; Graphics; Health care; Information management; Operating systems; Research; Systems communications
- Materials handling. *See* Agriculture; Distribution; Earth resources; Engineering; Facilities management; Financial management; Health care; Manufacturing; Research; Service industries
- Mathematics. *See* Accounting; Arts and leisure; Data conversion; Development tools; Education; Engineering; Graphics; Language processors; Manufacturing; Office systems; Research; Text management
- Mechanical engineering. *See* Engineering; Graphics; Manufacturing
- Media, 1064-1074. *See also* Information management; Library science; Sales and marketing; Text management
 - accounting, 1064, 1067, 1069, 1073
 - accounts receivable, 1065, 1068
 - advertising/promotion, 1064, 1067
 - billing, 1064-1066, 1068
 - broadcasting, 1064-1066, 1070-1073
 - data base management, 1066, 1070, 1071
 - data collection, 1069
 - data conversion, 1068
 - distribution, 1068, 1073
 - documentation tools, 1070, 1074
 - education, 1068
 - foreign language translation, 1070, 1074
 - information management, 1071
 - inventory, 1069, 1071, 1073
 - list processing, 1065, 1066
 - order processing, 1073
 - payroll, 1073
 - presentation aids, 1064, 1070, 1074
 - printing, 1064, 1068, 1069, 1073
 - production control, 1064, 1067
 - publishing, 1065, 1067, 1073
 - report writer, 1071
 - sales analysis, 1067
 - sales and marketing, 1065
 - scheduling, 1072
 - statistics, 1071
 - telecommunications, 1066
 - translators, 1068
 - warehousing, 1073
 - word processing, 1070, 1074

1718 Index

- Medical. *See* Agriculture; Engineering; Health care; Insurance; Research; Service industries; Text management
- Mental health. *See* Health care; Service industries
- Menu handlers. *See* Accounting; Computer operations; Development tools; Education; File management; Graphics; Information management; Language processors; Manufacturing; Office systems; Operating systems; Personal computing; Systems communications; Text management
- Metals. *See* Engineering; Management; Manufacturing; Research
- Microprocessor development. *See* Computer operations; Data conversion; Development tools; File management; Language processors; Operating systems; Personal computing; Systems communications
- Modeling/simulation. *See* Agriculture; Computer operations; Construction; Development tools; Distribution; Education; Engineering; File management; Financial management; Graphics; Information management; Language processors; Management; Manufacturing; Operating systems; Personnel; Research; Sales and marketing; Systems communications; Text management; Transportation
- MRP. *See* Manufacturing
- Networking. *See* Computer operations; Development tools; File management; Language processors; Management; Manufacturing; Office systems; Operating systems; Public utilities; Research; Systems communications
- Nuclear. *See* Engineering; Health care; Research
- Numerical analysis. *See* Education; Graphics; Research
- Numerical control. *See* Manufacturing
- Nutrition. *See* Agriculture; Health care
- Office systems, 1076–1112. *See also* Accounting; Development tools; Financial management; Graphics; Health care; Information management; Insurance; Personal computing; Real estate; Sales and marketing; Systems communications; Text management; Transportation
- A-to-Z, 1076, 1077
- accounting, 1080, 1097
- accounts receivable, 1088
- bar coding, 1111
- calculation aids, 1080, 1082, 1098, 1102
- computer-aided instruction, 1085
- computer operations, 1099
- cost accounting, 1110
- credit, 1088
- data base management, 1079, 1092, 1098, 1100, 1102, 1105, 1111
- data collection, 1096, 1101, 1102
- data entry, 1090, 1096, 1110
- decision support, 1098, 1107, 1110
- device drivers/handlers, 1112
- disk utilities, 1082
- documentation tools, 1083, 1086, 1092, 1098, 1105
- electronic mail, 1076, 1084–1087, 1093–1097, 1099, 1101, 1103, 1104, 1108, 1109
- file management, 1080, 1103
- file transfer, 1101
- financial analysis, 1079, 1090, 1098, 1110
- financial management, 1088
- financial planning, 1079
- forms management, 1081, 1091, 1093, 1098, 1101, 1103, 1110
- fund raising, 1107
- general ledger, 1079
- graphics, 1088, 1089, 1112
- information management, 1077, 1083, 1097, 1099, 1111
- inventory, 1081, 1097, 1107
- list processing, 1077, 1078, 1090, 1091, 1094–1096, 1098, 1104–1108, 1111
- management, 1077
- mathematics, 1102
- menu handlers, 1077, 1083, 1102
- networking, 1084, 1086, 1093–1095
- order processing, 1097
- payroll, 1097
- personal computing, 1080
- planning aids, 1104
- pre- and postprocessors, 1090
- presentation aids, 1078, 1087, 1089, 1112
- printing, 1077, 1080, 1081, 1087, 1092, 1093, 1101, 1103, 1106
- programming tools, 1104
- project management, 1083
- property management, 1090
- purchasing, 1081, 1107
- query facilities, 1079, 1110
- report writer, 1104
- scheduling, 1078, 1082, 1083, 1087, 1101, 1108
- spreadsheets, 1079, 1092, 1098, 1110
- systems communications, 1080
- telecommunications, 1088, 1100, 1108
- text management, 1082, 1083, 1085, 1086, 1090–1093, 1098, 1100, 1102, 1103, 1105, 1111
- word processing, 1079, 1082, 1083, 1085, 1090–1093, 1097–1100, 1103, 1104, 1107, 1109, 1111

Operating systems, 1114-1157. *See also*
 Computer operations; Education; File
 management; Information
 management; Systems
 communications
 A/D, D/A, 1144
 application development, 1125, 1126,
 1130
 assemblers, 1154
 compilers, 1123, 1132, 1133, 1141, 1142,
 1144-1146, 1155
 computer operations, 1114, 1122, 1133,
 1136, 1148, 1156
 data base management, 1117, 1118,
 1123, 1125, 1126, 1128, 1130
 data collection, 1115, 1128, 1131, 1149,
 1150
 debugging, 1114, 1127, 1145, 1147,
 1149, 1155
 development tools, 1114, 1116, 1121,
 1124-1126, 1134, 1135, 1137, 1140,
 1143, 1147, 1148, 1151, 1152, 1156
 device drivers/handlers, 1114, 1116,
 1118, 1124, 1128, 1138, 1139, 1147,
 1151, 1154, 1157
 diagnostics, 1114, 1119, 1125, 1134
 disk utilities, 1115-1119, 1124, 1132,
 1134, 1137, 1139, 1151, 1155
 documentation tools, 1135, 1136
 electronic mail, 1121
 file management, 1115, 1118, 1120,
 1122, 1124, 1134, 1137, 1139, 1140,
 1143, 1152, 1154
 file transfer, 1116, 1130, 1131, 1157
 financial management, 1123
 graphics, 1115, 1132, 1135, 1141, 1143
 health care, 1123
 information management, 1132
 instrumentation, 1130
 interpreters, 1125, 1126, 1138, 1146
 language enhancers, 1144
 language processors, 1117, 1118, 1123,
 1124, 1132, 1137, 1148, 1157
 mapping, 1129, 1139
 menu handlers, 1132
 microprocessor development, 1124,
 1125, 1147, 1151
 modeling/simulation, 1130, 1146
 networking, 1128, 1137, 1143, 1148,
 1150, 1151, 1154
 personal computing, 1116, 1131, 1143
 pre- and postprocessors, 1120
 presentation aids, 1119
 printing, 1119, 1138
 process control, 1115, 1130, 1131, 1146
 programming tools, 1117-1119, 1129,
 1132, 1133, 1136, 1149, 1153, 1154,
 1156, 1157
 real time, 1115, 1117, 1121, 1127,
 1140-1143, 1145-1147, 1149, 1150,
 1156
 report writer, 1149, 1150

scheduling, 1151
 scientific, 1114, 1141, 1142, 1145
 security, 1122, 1127
 signal processing, 1114, 1131
 software utilities, 1114, 1115, 1117,
 1119, 1120, 1122-1124, 1127, 1129,
 1133, 1134, 1136-1139, 1143, 1147,
 1151, 1153
 source code control, 1154, 1157
 statistics, 1127, 1128, 1149, 1150
 systems communications, 1128, 1130,
 1133, 1135, 1146, 1150
 text management, 1122, 1132, 1142,
 1157
 word processing, 1130
 Optics. *See* Data conversion; Engineering;
 Health care
 Order processing. *See* Accounting;
 Agriculture; Construction;
 Distribution; Financial management;
 Health care; Information
 management; Management;
 Manufacturing; Media; Office
 systems; Sales and marketing; Trade;
 Transportation
 Payroll. *See* Accounting; Arts and leisure;
 Construction; Data conversion;
 Distribution; Education; Financial
 management; Government; Health
 care; Information management;
 Management; Media; Office systems;
 Personnel; Public utilities; Service
 industries; Transportation
 Personal computing, 1160-1164. *See also*
 Graphics; Office systems; Operating
 systems; Systems communications
 application development, 1160
 assemblers, 1162
 calculation aids, 1164
 data base management, 1160, 1164
 data conversion, 1162
 diagnostics, 1162
 down-line loading, 1162
 file management, 1161, 1162
 file transfer, 1161, 1162
 financial planning, 1164
 forms management, 1163
 graphics, 1164
 information management, 1160
 menu handlers, 1162
 microprocessor development, 1161
 office systems, 1161
 presentation aids, 1163
 printing, 1163
 programming tools, 1160-1162
 report writer, 1160
 scheduling, 1160
 software utilities, 1163
 spreadsheets, 1164
 systems communications, 1162

1720 Index

- word processing, 1161, 1164
Personnel, 1168–1177. *See also*
Accounting; Education; Financial
management; Government; Health
care; Management
accounting, 1170, 1175–1177
banking, 1172
billing, 1176, 1177
cost accounting, 1177
data base management, 1170
data collection, 1169
decision support, 1170
education, 1168
employment, 1168–1174
file management, 1177
financial planning, 1170
information management, 1169, 1173,
1176
list processing, 1174
modeling/simulation, 1170, 1171
payroll, 1168, 1169, 1172, 1174–1176
pharmaceutical, 1171
project management, 1170, 1177
query facilities, 1169
recruiting, 1173
report writer, 1169, 1172
service industries, 1172, 1176
statistics, 1169, 1171
taxes, 1168, 1172
word processing, 1170
Petroleum. *See* Distribution; Earth
resources; Engineering;
Manufacturing; Service industries
Pharmaceutical. *See* Engineering; Health
care; Manufacturing; Personnel;
Research
Pipeline simulation. *See* Earth resources
Planning aids. *See* Accounting; Computer
operations; Distribution; Education;
Facilities management; Financial
management; Health care;
Information management;
Management; Manufacturing; Office
systems; Transportation
Point of sale. *See* Accounting; Arts and
leisure; Distribution; Sales and
marketing; Service industries; Trade
Pre- and postprocessors. *See* Data
conversion; Development tools;
Engineering; Graphics; Language
processors; Manufacturing; Office
systems; Operating systems; Systems
communications; Text management
Presentation aids. *See* Arts and leisure;
Computer operations; Data
conversion; Education; Engineering;
Graphics; Information management;
Language processors; Media; Office
systems; Operating systems; Personal
computing; Sales and marketing; Text
management
Printing. *See* Computer operations; Data
conversion; Development tools; File
management; Graphics; Health care;
Media; Office systems; Operating
systems; Personal computing; Systems
communications; Text management
Process control. *See* Agriculture; Data
conversion; Development tools; Earth
resources; Engineering; Facilities
management; File management;
Graphics; Language processors;
Manufacturing; Operating systems;
Research; Systems communications;
Text management
Production control. *See* Agriculture;
Construction; Distribution; Earth
resources; Graphics; Health care;
Information management;
Manufacturing; Media
Programming tools. *See* Computer
operations; Data conversion;
Development tools; Education;
Engineering; File management;
Graphics; Information management;
Language processors; Manufacturing;
Office systems; Operating systems;
Personal computing; Research;
Systems communications; Text
management
Project management. *See* Accounting;
Computer operations; Construction;
Development tools; Engineering;
Facilities management; File
management; Financial management;
Graphics; Information management;
Management; Manufacturing; Office
systems; Personnel; Public utilities
Property maintenance. *See* Construction;
Facilities management;
Manufacturing; Public utilities;
Service industries; Transportation
Property management. *See* Accounting;
Agriculture; Facilities management;
Government; Health care; Insurance;
Office systems; Real estate; Service
industries
Public utilities, 1180–1191. *See also* Earth
resources; Government
accounting, 1182, 1183, 1185, 1187
accounts receivable, 1180, 1187
automotive, 1184, 1190
billing, 1180, 1183–1187, 1189
cost accounting, 1190, 1191
credit, 1187
data base management, 1188, 1189
data collection, 1181, 1189
electrical, 1182, 1183, 1187
facilities management, 1181, 1189
general ledger, 1180, 1184, 1187
information management, 1182, 1183,
1187–1189
inventory, 1186, 1188

- networking, 1185
- payroll, 1183, 1185
- project management, 1191
- property maintenance, 1181, 1188
- query facilities, 1189
- report writer, 1180, 1187, 1189
- scheduling, 1181, 1184
- service industries, 1182, 1183
- telecommunications, 1181, 1185-1188
- Publishing. *See* Information management; Media; Text management
- Purchasing. *See* Accounting; Computer operations; Construction; Distribution; Facilities management; Financial management; Government; Health care; Information management; Library science; Manufacturing; Office systems; Trade
- Quality control. *See* Agriculture; Computer operations; Development tools; Engineering; Health care; Information management; Manufacturing; Research
- Query facilities. *See* Accounting; Development tools; Education; File management; Graphics; Health care; Information management; Law; Management; Office systems; Personnel; Public utilities; Real estate; Service industries; Text management
- Real estate, 1194-1204. *See also* Accounting; Construction; Financial management; Government; Law
 - accounting, 1195, 1196, 1199, 1202-1204
 - accounts receivable, 1195, 1198, 1202
 - banking, 1194, 1197, 1198
 - billing, 1195-1197, 1202
 - data base management, 1200, 1202, 1204
 - decision support, 1196
 - financial analysis, 1194, 1198, 1199
 - financial management, 1196, 1197
 - fixed assets, 1195
 - general ledger, 1195, 1198, 1203, 1204
 - government, 1196, 1197
 - information management, 1200, 1201
 - inventory, 1204
 - investments, 1203
 - list processing, 1199-1201
 - management, 1201
 - office systems, 1201
 - property management, 1194-1200, 1202-1204
 - query facilities, 1200, 1202
 - report writer, 1195
 - sales analysis, 1202, 1204
- scheduling, 1199
- source code control, 1200
- statistics, 1197
- Real time. *See* Arts and leisure; Data conversion; Development tools; Engineering; File management; Graphics; Language processors; Manufacturing; Operating systems; Research; Systems communications
- Recruiting. *See* Education; Information management; Management; Personnel
- Report writer. *See* Accounting; Agriculture; Arts and leisure; Computer operations; Construction; Development tools; Earth resources; Education; File management; Financial management; Health care; Information management; Insurance; Law; Management; Manufacturing; Media; Office systems; Operating systems; Personal computing; Personnel; Public utilities; Real estate; Sales and marketing; Text management
- Research, 1208-1226. *See also* Development tools; Engineering; Health care; Information management; Library science; Text management
 - A/D, D/A, 1214
 - artificial intelligence, 1216
 - biology, 1210-1212, 1221, 1225
 - calculation aids, 1208, 1211, 1214, 1217, 1221, 1222
 - chemical, 1208, 1209, 1217, 1220, 1225
 - compilers, 1213
 - data collection, 1209, 1210, 1217, 1221, 1225, 1226
 - decision support, 1216
 - dental, 1211
 - device drivers/handlers, 1210
 - education, 1215
 - electrical, 1217
 - engineering, 1208-1210, 1216-1218, 1224
 - geoscience, 1208, 1225
 - graphics, 1208, 1212, 1216
 - health care, 1209, 1210
 - instrumentation, 1214, 1220, 1222, 1224
 - interpreters, 1208
 - manufacturing, 1224
 - mapping, 1226
 - materials handling, 1212
 - mathematics, 1211-1213, 1215, 1218, 1219, 1223, 1226
 - medical, 1210, 1212, 1214, 1220, 1226
 - metals, 1208
 - modeling/simulation, 1212, 1215, 1217, 1219, 1221
 - networking, 1217
 - nuclear, 1214, 1220, 1222, 1224

1722 Index

- numerical analysis, 1208, 1218, 1219, 1223
- pharmaceutical, 1208, 1221, 1226
- process control, 1222
- programming tools, 1211, 1213
- quality control, 1224
- real time, 1222
- scientific, 1208, 1210, 1214, 1216, 1217, 1219-1222, 1224-1226
- seismic modeling, 1225
- signal processing, 1211, 1214, 1216, 1225
- software utilities, 1222, 1223
- statistics, 1212, 1215, 1216, 1218, 1219, 1221
- structural engineering, 1225
- text management, 1213
- word processing, 1221
- Retail. *See* Construction; Distribution; Financial management; Health care; Trade
- Robotics. *See* Distribution; File management; Manufacturing
- Sales analysis. *See* Accounting; Agriculture; Construction; Distribution; Engineering; Government; Health care; Information management; Insurance; Manufacturing; Media; Real estate; Sales and marketing; Service industries; Trade; Transportation
- Sales and marketing, 1230-1244. *See also* Distribution; Financial management; Insurance; Manufacturing; Media; Service industries
 - accounting, 1230, 1239, 1244
 - accounts receivable, 1231
 - advertising/promotion, 1230, 1232, 1233, 1242
 - automotive, 1236
 - calculation aids, 1232
 - data base management, 1231, 1240, 1243
 - data collection, 1236
 - decision support, 1232, 1236, 1237, 1242
 - distribution, 1232, 1233
 - financial analysis, 1237, 1241
 - forecasting, 1233
 - forms management, 1236, 1243
 - information management, 1230, 1243
 - inventory, 1235, 1244
 - list processing, 1235, 1238, 1240, 1242, 1243
 - manufacturing, 1232, 1233, 1237
 - media, 1230
 - modeling/simulation, 1236
 - office systems, 1240, 1243
 - order processing, 1230, 1232, 1235, 1237, 1238, 1244
 - point of sale, 1242
 - presentation aids, 1233, 1236
 - report writer, 1230, 1241
 - sales analysis, 1230, 1233, 1234, 1236-1243
 - scheduling, 1231, 1235, 1237
 - statistics, 1236
 - telecommunications, 1231, 1243
 - wholesale, 1232, 1238, 1244
- Scheduling. *See* Accounting; Agriculture; Arts and leisure; Computer operations; Construction; Development tools; Distribution; Earth resources; Education; Engineering; Facilities management; Financial management; Health care; Insurance; Law; Management; Manufacturing; Media; Office systems; Operating systems; Personal computing; Public utilities; Real estate; Sales and marketing; Service industries; Systems communications; Transportation
- Scientific. *See* Data conversion; Development tools; Engineering; Graphics; Health care; Information management; Language processors; Manufacturing; Operating systems; Research; Systems communications; Text management
- Security. *See* Accounting; Computer operations; Data conversion; Development tools; Engineering; Facilities management; File management; Health care; Manufacturing; Operating systems; Systems communications; Text management
- Seismic modeling. *See* Research
- Service industries, 1246-1257. *See also* Personnel; Public utilities; Transportation
 - accounting, 1249, 1251-1253
 - accounts payable, 1249
 - accounts receivable, 1246
 - arts and leisure, 1247-1250, 1253, 1255, 1256
 - automotive, 1256
 - billing, 1253
 - cost accounting, 1246, 1249, 1252, 1256
 - decision support, 1247
 - financial management, 1250, 1255
 - health care, 1254
 - information management, 1248, 1249, 1254
 - inventory, 1246, 1248, 1249, 1251-1253
 - management, 1253
 - materials handling, 1253
 - medical, 1254
 - mental health, 1254
 - payroll, 1249
 - petroleum, 1252
 - point of sale, 1246

- property maintenance, 1246, 1252, 1253, 1256, 1257
- property management, 1247, 1250, 1253
- query facilities, 1247
- sales analysis, 1249–1251
- sales and marketing, 1247, 1252, 1255
- scheduling, 1248, 1252, 1253, 1256
- shop floor control, 1251
- textiles/clothing, 1247
- transportation, 1256
- warehousing, 1248, 1253
- Shop floor control. *See* Distribution; Manufacturing; Service industries
- Signal processing. *See* Computer operations; Data conversion; Development tools; Engineering; File management; Graphics; Health care; Manufacturing; Operating systems; Research; Systems communications; Text management
- Software utilities. *See* Computer operations; Data conversion; Development tools; Education; Engineering; File management; Graphics; Health care; Information management; Language processors; Manufacturing; Operating systems; Personal computing; Research; Systems communications; Text management
- Source code control. *See* Data conversion; Development tools; Engineering; File management; Information management; Language processors; Operating systems; Real estate; Systems communications; Text management
- Spreadsheets. *See* Accounting; Development tools; Financial management; Health care; Information management; Management; Office systems; Personal computing; Systems communications
- Statistics. *See* Accounting; Agriculture; Arts and leisure; Computer operations; Data conversion; Development tools; Distribution; Education; Engineering; Financial management; Graphics; Health care; Information management; Insurance; Library science; Management; Manufacturing; Media; Operating systems; Personnel; Real estate; Research; Sales and marketing; Systems communications; Transportation
- Structural engineering. *See* Construction; Engineering; Research
- Systems communications, 1260–1364. *See also* Data conversion; Development tools; File management; Graphics; Information management; Language processors; Manufacturing; Office systems; Operating systems; Personal computing; Text management
- A-to-Z, 1261
- A/D, D/A, 1317
- asynchronous communication, 1266, 1269–1272, 1280–1284, 1286, 1288, 1290, 1293, 1299, 1305, 1306, 1322–1324, 1332, 1335, 1339, 1347, 1352, 1358–1360, 1363, 1364
- calculation aids, 1348
- computer operations, 1323, 1333
- data base management, 1294, 1295, 1327
- data collection, 1271
- data conversion, 1266–1268, 1279, 1280, 1287, 1292, 1307, 1311, 1324, 1328, 1338, 1340, 1341, 1343–1346, 1348, 1353
- data entry, 1291, 1327
- debugging, 1275, 1293, 1320, 1321, 1347
- development tools, 1278, 1320, 1321
- device drivers/handlers, 1260, 1270, 1273–1278, 1280, 1291, 1293–1298, 1307, 1308, 1312–1314, 1316, 1317, 1319–1322, 1324–1326, 1329, 1331, 1332, 1337, 1339, 1343, 1347, 1348, 1350, 1356, 1357, 1363, 1364
- diagnostics, 1266, 1294, 1295, 1299, 1362
- disk utilities, 1269, 1274, 1278, 1303, 1324, 1334, 1339, 1352, 1356, 1357
- down-line loading, 1262–1265, 1303, 1347, 1354
- electronic mail, 1268, 1291, 1349, 1351
- file management, 1290, 1302, 1304, 1309, 1350, 1352, 1353, 1356
- file transfer, 1261–1272, 1275, 1279–1284, 1286, 1287, 1291–1293, 1298, 1302–1309, 1311, 1314–1316, 1318, 1323, 1324, 1328, 1329, 1332, 1335–1339, 1341, 1343, 1345–1347, 1349–1353, 1355, 1358–1360, 1362
- graphics, 1322, 1330, 1337, 1356, 1357, 1360
- information management, 1311
- list processing, 1351
- mapping, 1308, 1316, 1332, 1352
- menu handlers, 1333
- microprocessor development, 1270, 1350
- modeling/simulation, 1260, 1272, 1344
- networking, 1260–1265, 1268, 1269, 1271, 1272, 1274, 1275, 1279, 1281–1289, 1291, 1293, 1294, 1298, 1300–1308, 1310, 1311, 1314, 1315, 1319, 1320, 1322–1324, 1326–1329, 1331, 1332, 1334–1336, 1338–1346, 1349, 1351, 1352, 1354–1356, 1358, 1360–1364
- office systems, 1261–1265
- operating systems, 1321, 1352

1724 Index

- personal computing, 1332, 1349, 1362
 - pre- and postprocessors, 1260, 1291, 1307, 1314, 1315
 - printing, 1299, 1321, 1322
 - process control, 1291, 1314
 - programming tools, 1270, 1318, 1320, 1321, 1337, 1355
 - real time, 1355
 - scheduling, 1355
 - scientific, 1348
 - security, 1289, 1323, 1335
 - signal processing, 1271, 1276, 1277, 1279, 1348
 - software utilities, 1272, 1274, 1278, 1291, 1302, 1303, 1306-1308, 1316, 1323, 1325, 1326, 1337, 1359, 1362
 - source code control, 1269, 1293, 1296, 1307, 1316, 1318, 1332
 - spreadsheets, 1292
 - statistics, 1269, 1274
 - telecommunications, 1261, 1266-1269, 1271-1273, 1275, 1279, 1280, 1287-1291, 1294, 1306-1308, 1310, 1311, 1324, 1326-1328, 1330, 1333, 1335-1338, 1340, 1349, 1352, 1354, 1355, 1358, 1361, 1362
 - translators, 1292
 - word processing, 1280, 1299
- Taxes.** *See* Accounting; Arts and leisure; Education; Financial management; Government; Personnel
- Telecommunications.** *See* Accounting; Data conversion; Development tools; Facilities management; Financial management; Information management; Manufacturing; Media; Office systems; Public utilities; Sales and marketing; Systems communications
- Text management, 1368-1405.** *See also* Data conversion; Development tools; Engineering; File management; Graphics; Information management; Language processors; Library science; Office systems; Operating systems; Research
- A-to-Z, 1368**
- application development, 1374, 1402
 - compilers, 1388
 - computer-aided instruction, 1373, 1379
 - data base management, 1374, 1392
 - data conversion, 1403
 - data dictionary, 1370, 1372, 1388, 1395, 1396, 1404
 - data entry, 1372, 1377, 1378, 1384, 1388
 - development tools, 1368, 1374, 1376
 - device drivers/handlers, 1380, 1401
 - disk utilities, 1371, 1374, 1376, 1379
 - documentation tools, 1371, 1373, 1375, 1379, 1381, 1382, 1386, 1388, 1390-1392, 1396-1398, 1401
 - down-line loading, 1383
 - file management, 1372, 1373, 1383, 1388, 1395, 1399, 1405
 - file transfer, 1383, 1387, 1399
 - forms management, 1377, 1378, 1386, 1388, 1400
 - games, 1389
 - graphics, 1381, 1387, 1400, 1401
 - list processing, 1394, 1403
 - mathematics, 1382
 - media, 1401
 - medical, 1392
 - menu handlers, 1400
 - modeling/simulation, 1373, 1379, 1380
 - office systems, 1368, 1381, 1386, 1404, 1405
 - pre- and postprocessors, 1399
 - presentation aids, 1369, 1373, 1379, 1381, 1382, 1389, 1394, 1400, 1401
 - printing, 1369, 1370, 1373, 1375, 1379, 1380, 1382-1385, 1390-1392, 1399, 1401, 1403
 - process control, 1385
 - programming tools, 1368, 1373, 1374, 1376-1380, 1394, 1396-1398, 1400, 1402
 - publishing, 1373, 1381, 1392
 - query facilities, 1374, 1377, 1378, 1400
 - report writer, 1372, 1386, 1393, 1402, 1405
 - research, 1374
 - scientific, 1382, 1392, 1404, 1405
 - security, 1403
 - signal processing, 1385
 - software utilities, 1368, 1372, 1375, 1383, 1384, 1395, 1396
 - source code control, 1386
 - systems communications, 1399
 - translators, 1375
 - word processing, 1368, 1370, 1371, 1381, 1382, 1384, 1386-1388, 1390, 1392, 1394, 1395, 1403-1405
- Textiles/clothing.** *See* Distribution; Manufacturing; Service industries; Trade
- Trade, 1408-1415.** *See also* Financial management
- accounting, 1409, 1410, 1413
 - accounts receivable, 1414
 - arts and leisure, 1415
 - banking, 1408
 - billing, 1410
 - credit, 1408
 - distribution, 1413
 - financial analysis, 1411
 - financial management, 1412
 - import/export, 1410
 - information management, 1410, 1415
 - inventory, 1409-1415

- order processing, 1410, 1413
- point of sale, 1408, 1409, 1411-1414
- purchasing, 1408, 1411
- retail, 1408-1410, 1412-1415
- sales analysis, 1413, 1414
- textiles/clothing, 1408
- transportation, 1410
- warehousing, 1413
- wholesale, 1409, 1413, 1414
- Translators. *See* Data conversion;
 - Development tools; File management;
 - Language processors; Manufacturing;
 - Media; Systems communications; Text management
- Transportation, 1418-1423. *See also*
 - Distribution; Financial management;
 - Service industries; Trade
- accounting, 1418, 1419, 1422, 1423
- accounts payable, 1423
- accounts receivable, 1423
- aeronautics/aerospace, 1421
- automotive, 1418, 1419
- billing, 1418
- cost accounting, 1420, 1422
- data base management, 1419
- decision support, 1418, 1423
- distribution, 1423
- financial analysis, 1420
- forms management, 1419
- general ledger, 1423
- information management, 1420, 1422, 1423
- inventory, 1418-1421
- modeling/simulation, 1418
- office systems, 1420
- order processing, 1419
- payroll, 1418, 1422
- planning aids, 1422, 1423
- property maintenance, 1420, 1421
- sales analysis, 1418, 1419, 1423
- scheduling, 1421, 1422
- service industries, 1423
- statistics, 1423
- Warehousing. *See* Accounting;
 - Construction; Distribution; Earth resources; Information management; Manufacturing; Media; Service industries; Trade
- Wholesale. *See* Accounting; Construction;
 - Distribution; Sales and marketing; Trade
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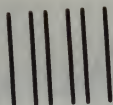
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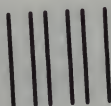
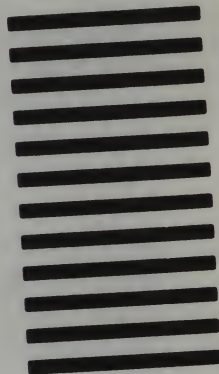
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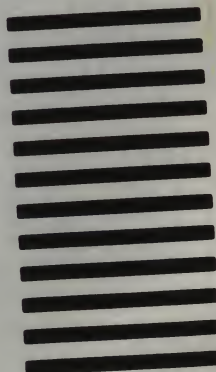
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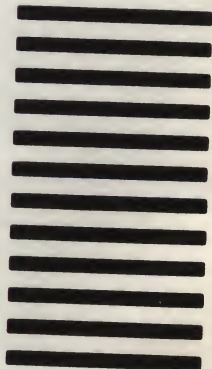
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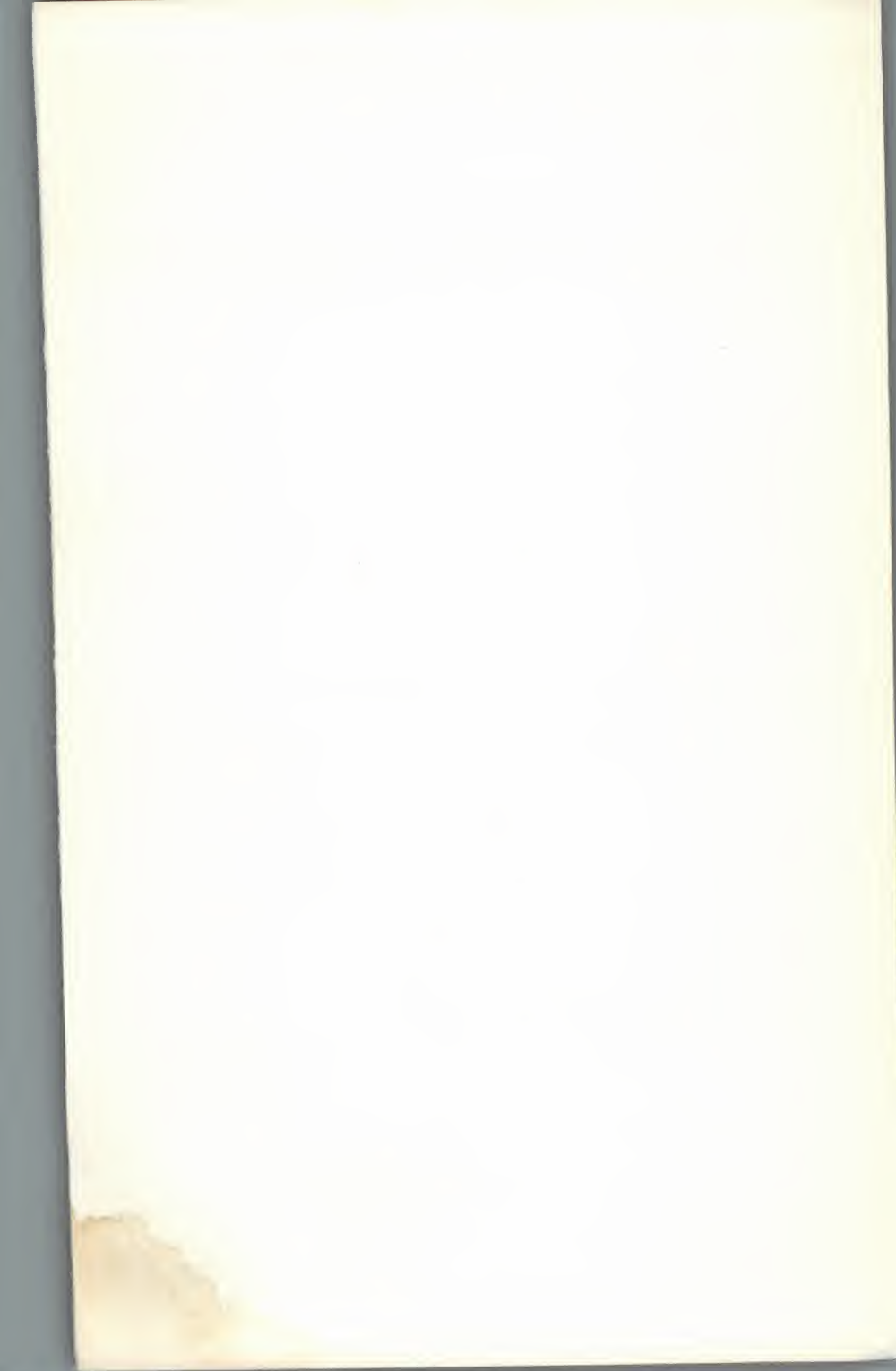
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